DX-706/7

REF. NO. 3410

ONKYO® SERVICE MANUAL

COMPACT DISC PLAYER
MODEL DX-706/MODEL DX-708

Black and Silver models

UDN, UD	120V AC, 60 Hz
UP	230V AC, 50Hz
UW	120/220V AC, 50/60Hz
UQA	240V AC, 50 Hz

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ ON THE SCHEMATIC DIAGRAM AND IN THE PARTS LIST ARE CRITICAL FOR RISK OF FIRE AND ELECTRIC SHOCK. REPLACE THESE COMPONENTS WITH ONKYO PARTS WHOSE PARTS NUMBERS APPEAR AS SHOWN IN THIS MANUAL.

MAKE LEAKAGE-CURRENT OR RESISTANCE MEASUREMENTS TO DETERMINE THAT EXPOSED PARTS ARE ACCEPTABLY INSULATED FROM THE SUPPLY CIRCUIT BEFORE RETURNING THE APPLIANCE TO THE CUSTOMER.

ONKYO
AUDIO COMPONENTS

SPECIFICATIONS

	Model DX-706	DX-708
Signal readout system:	Optical non-contact	Optical non-contact
Reading rotation:	About 500-200 r.p.m. (constant linear velocity)	About 500-200 r.p.m. (constant linear velocity)
Linear velocity:	1.2-1.4m/s	1.2-1.4m/s
Error correction system:	Cross interleave Reed Solomon code	Cross interleave Reed Solomon code
D/A converter:	1 BIT PWM × 2 AccuPulse Quartz System	1 BIT PWM × 2 AccuPulse Quartz System
Sampling frequency:	352.8kHz (eight-times oversampling)	352.8kHz (eight-times oversampling)
Number of channels:	2 (stereo)	2 (stereo)
Frequency response:	2 Hz-20kHz	2 Hz-20kHz
Total harmonic distortion:	0.0020% (at 1 kHz)	0.0020% (at 1 kHz)
Dynamic range:	100dB	100dB
Signal to noise ratio:	110dB	110dB
Channel separation:	110dB (at 1 kHz)	110dB (at 1 kHz)
Wow and Flutter:	Below threshold of measurability	Below threshold of measurability
Output level:	2 volts r.m.s.	2 volts r.m.s.
Power consumption:	21 watts	21 watts
Dimensions (W×H×D):	445×130×364mm 17-15/16" × 5-1/8" × 14-5/16"	455×130×364mm 17-15/16" × 5-1/8" × 14-5/16"
Weight:	8kg, 17.6 lbs.	8.8kg, 19.4 lbs.

Specifications and external appearance are subject to change without notice because of product improvements.

SERVICE PROCEDURES

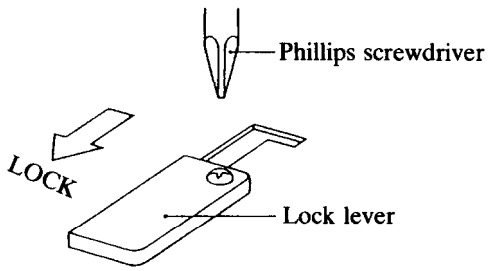
1. How to Release the Transport Lock

To protect the optical assembly including the laser pickup from vibration related damage during shipping, this unit is equipped with a transport lock lever located on the base.

1. Loosen the screw with Phillips screwdriver.
2. Move the lock lever in the direction opposite that shown by the arrow. Move the lever up to the position where it can move no farther, and then remove the lever.

■ Tighten the screw to secure the lock lever.

- For shipping, restore the lock lever to its position in the direction of the arrow, then tighten down the screw to secure the lock lever in that position.



2. Use of batteries

- The remote control transmitter is powered by two batteries. Before using this unit for the first time, insert the two batteries (included).
- Average battery life is about one year. This period may be shorter depending on the frequency of use and environment (temperature and humidity) in which the remote control transmitter is used.
- If the remote control transmitter does not operate even though front panel controls function normally, the batteries should be replaced. Use only listed in the following chart.

Type	Voltage	Size
Manganese	1.5V	AA R6 UM-3

3. Safety check out

After correcting the original service problem, perform the following safety check before releasing the set to the customer:

Connect the insulating-resistance tester between the plug of power supply cable and chassis.

Specifications: more than 10Mohm at 500V.

4. Voltage selector (rear panel)

Worldwide models are equipped with a voltage selector to conform with local power supplies. Be sure to set this selector to match the voltage of the power supply in your area before turning the power switch on. Voltage is changed by turning the voltage selector with a screwdriver or similar instrument to the 120V or 220V position. Confirm that the selector has been set to the correct position before turing the power switch on. If there is no voltage selector switch on the unit you have purchased, it can only be used in areas where the power supply voltage is the same as that of the unit.

LASER WARNING LABEL

The label shown below are affixed.

1. Warning lable

This label is located on the arm of mechanism.

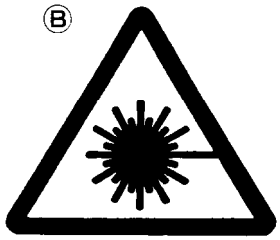
Ⓐ

DANGER —INVISIBLE LASER RADIATION WHEN OPEN AND INTERLOCK FAILED OR DEFEATED. AVOID DIRECT EXPOSURE TO BEAM

CAUTION —HAZARDOUS LASER AND ELECTROMAGNETIC RADIATION WHEN OPEN AND INTERLOCK DEFEATED

ATTENTION —RAYONNEMENT LASER ET ELECTROMAGNETIQUE DANGEREUX SI OUVERT AVEC L'ECLENCHEMENT DE SECURITE ANNULE.

Ⓑ



Ⓒ

ADVARSEL: USYNLIG LASERSTRÅLING VED ÅBNING, NÅR SIKKERHEDSAFBRYDER ER UDE AF FUNKTION. UNDGÅ UDSÆTTELSE FOR STRÅLING.

Ⓓ

VARO! AVATAESSA OLET ALTTINA NÄKYMÄTTÖMÄLLE LASERSÄTEILYLLE. ÄLÄ KATSO SÄTEESEEN.

Ⓔ

VARNING – OSYNLIG LASERSTRÅLNING NÄR DENNA DEL ÄR ÖPPNAD. STRÅLEN ÄR FARLIG.

Ⓐ : Danger label

Ⓑ : Except 120V model

Ⓒ, Ⓓ, Ⓔ: Only 230V model

2. Certification label (120V model)

This label is located on the back panel.

PRODUCT IS CERTIFIED BY THE MANUFACTURER TO COMPLY WITH DHHS RULES 21 CFR SUBCHAPTER J APPLICABLE AT THE DATE OF MANUFACTURE.

MANUFACTURED

3. Class 1 label (Except 120V model)

This label is located on the back panel.

"CLASS 1 LASER PRODUCT"

ADVARSEL

Denne mærkning er anbragt på apparatets højre side og indikerer, at apparatet arbejder med laserstråler af klasse 1, hvilket betyder, at der anvendes laserstråler af svageste klasse, og at man ikke på apparatets yderside kan blive udsat for utilladelig kraftig stråling.

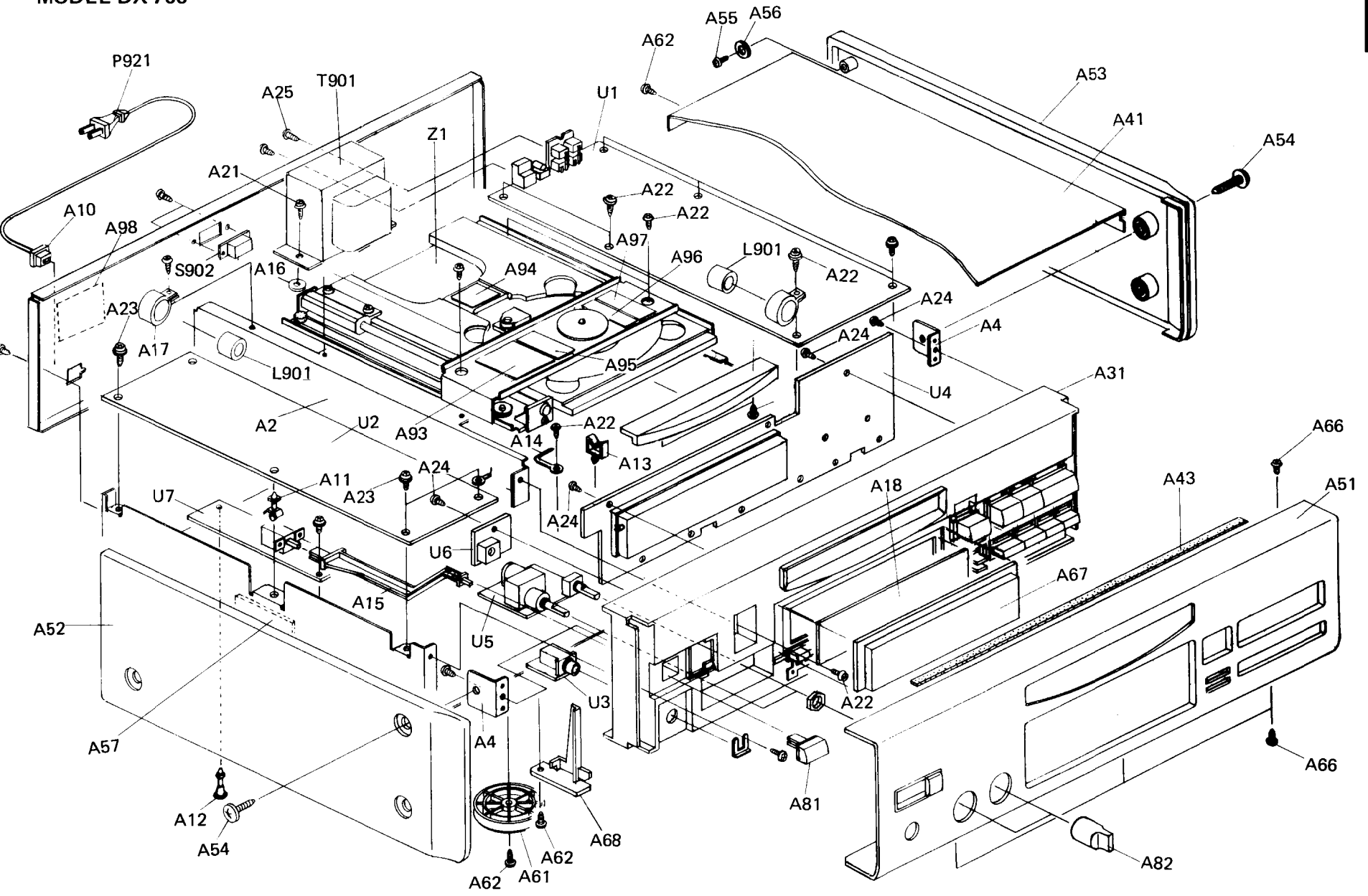
APPARATET BØR KUN ÅBNES AF FAGFOLK MED SÆRLIGT KENDSKAB TIL APPARATER MED LASERSTRÅLER!

Indvendigt i apparatet er anbragt den her gengivne advarselsmærkning, som advarer imod at foretage sådanne indgreb i apparatet, at man kan komme til at udsætte sig for laserstråling.

VAROITUS! Laite sisältää laserdiodin, joka lähettää (näkymätöntä) silmille vaarallista lasersäteilyä.

CHASSIS-EXPLODED VIEW

MODEL DX-706



PARTS LIST

MODEL DX-706

REF.NO.	PART NO.	DESCRIPTION
A1	27100248A	Chassis
A2	27130660B	Bracket C
A4	27141496	Bracket S
A8	27121503	Back panel <D>
	27121504	Back panel <P>
	27121506	Back panel <W>
	27121511	Back panel <Q>
A10	27300750	⚠ Bushing,cord
A11	27190009	KGLS-4S,Holder
A12	27190524	KGLS-14R,Holder
A13	27300833	Clamp
A14	27255004	Clip
A15	27273142	Joint, power
A16	27270327A	Spacer
A17	27190608	Holder,clamp
A18	28133269	Back plate
A21	830440109	4TTC+10C(BC),Self-tapping screw
A22	834430088	3TTS+8B(BC),Self-tapping screw
A23	831130088	3TTW+8B,Self-tapping screw
A24	833430080	3TTP+8P(BC),Self-tapping screw
A25	801230	3STS+8BQ(BC),Self-tapping screw
A31	27110659B	Front bracket ass'y <B>
	27110660A	Front bracket ass'y <S>
A41	28184490A	Top cover
A43	28140837	0.9×250×10mm,Cushion
A44	28141009	1.5×195×125mm,Cushion
A51	1H169121	Front panel ass'y <B>
	1H170121	Front panel ass'y <S>
A52	28185371	Side panel L
A53	28185372	Side panel R
A54	837440169	4TTC+16C(BC),Self-tapping screw
A55	834440088	4TTS+8B(BC),Self-tapping screw
A56	87644012	W4×12F(BC),Washer
A57	28175190	Insulator plate
A61	27175254	Leg
A62	834430088	3TTS+8B(BC),Self-tapping screw
A64	28148256	Tray panel <B>
	28148258	Tray panel <S>
A65	838430068	3TTB+6B(BC),Self-tapping screw
A66	833430080	3TTP+8P(BC),Self-tapping screw
A67	28191604A	Clear plate
A68	28335034A	Lever, lock
A81	28324397	Knob, power <B>
	28324398	Knob, power <S>
A82	28324492	Knob, level <B>
	28324493	Knob, level <S>
A93	29360807	Label DANGER
A94	29361218	Label LASER <P/W/Q>

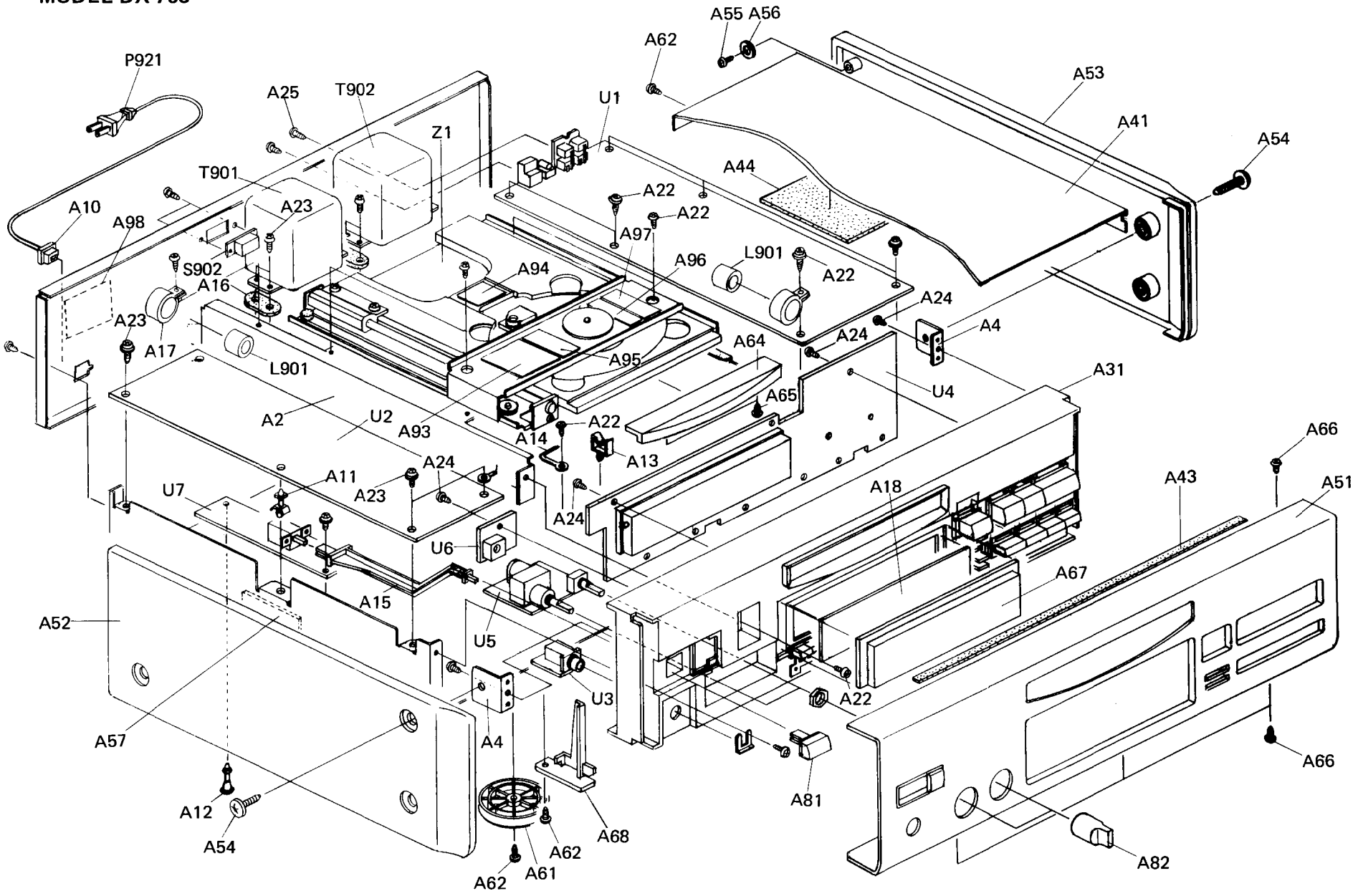
REF.NO.	PART NO.	DESCRIPTION
A95	29360811A	Label <P>
A96	29361298	Label SEM <P>
A97	29361342	Label SEM/FIN <P>
A98	29360687	Label CLASS1 <P/W/Q>
A99	28175189	Insulator plate <S>
L901	230910	ESD-R-25DB,Core
P921	253161,	⚠ AS-UC-6#18,
	253168 or	Power supply cord
	253146	<D>
	253149	⚠ AS-CEE 250V 2.5A,
		Power supply cord <P/W>
	253170	⚠ AS-SAA,Power supply cord <Q>
S902	25065195	⚠ NSS-1288P,Voltage selector switch <W>
T901	2300727A	⚠ NPT-1121D,Power transformer <D>
	2300728A	⚠ NPT-1121P,Power transformer <P>
	2300729A	⚠ NPT-1121DG,Power transformer <W>
	2300734A	⚠ NPT-1121Q,Power transformer <Q>
U1	1H169572-1	NAAR-4272-1,Main circuit pc board ass'y
U2	1H169573-1	NADG-4273-1,Digital circuit pc board ass'y <D>
	1H169573-1A	NADG-4273-1A,Digital circuit pc board ass'y <P/W/Q>
U3	1H169574-1	NAAF-4274-1,Headphone terminal pc board ass'y
U4	1H169575-1	NADIS-4275-1,Display circuit pc board ass'y <D>
	1H169575-1A	NADIS-4275-1A,Display circuit pc board ass'y <P/W/Q>
U5	1H169576-1	NAAF-4276-1,Output volume pc board ass'y
U6	1H169577-1	NAETC-4277-1,Sensor pc board ass'y
U7	1H169578-1	NAPS-4278-1,Power supply pc board ass'y
Z1		NCD-39M,Mechanism ass'y
	260208	Binder

NOTE: <D>:Only 120V model
<P>:Only 230V model
<W>:Only Worldwide model
<Q>:Only 240V model
<B>:Only Black model
<S>:Only Silver model

NOTE: THE COMPONENTS IDENTIFIED BY MARK ⚠ ARE CRITICAL FOR RISK OF FIRE AND ELECTRIC SHOCK. REPLACE ONLY WITH PART NUMBER SPECIFIED.

CHASSIS-EXPLODED VIEW

MODEL DX-708



PARTS LIST

MODEL DX-708

REF.NO.	PART NO.	DESCRIPTION
A1	27100249A	Chassis
A2	27130661A	Bracket C
A4	27141496	Bracket S
A8	27121507	Back panel <D>
	27121508	Back panel <P>
	27121510	Back panel <W>
	27121512	Back panel <Q>
A10	27300750	⚠ Bushing,cord
A11	27190009	KGLS-4S,Holder
A12	27190524	KGLS-14R,Holder
A13	27300833	Clamp
A14	27255004	Clip
A15	27273142	Joint, power
A16	27270327A	Spacer
A17	27190608	Holder,clamp
A18	28133269	Back plate
A21	838440109	4TTB+10C(BC),Self-tapping screw
A22	834430088	3TTS+8B(BC),Self-tapping screw
A23	831130088	3TTW+8B,Self-tapping screw
A24	833430080	3TTP+8P(BC),Self-tapping screw
A25	801230	3STS+8BQ(BC),Self-tapping screw
A31	27110659B	Front bracket ass'y
A41	28184490A	Top cover
A43	28140837	0.9×250×10mm,Cushion
A44	28141009	1.5×195×125mm,Cushion
A51	1H173121	Front panel ass'y DA009
A52	28185371	Side panel L CR07
A53	28185372	Side panel R
A54	837440169	4TTC+16C(BC),Self-tapping screw
A55	834440088	4TTS+8B(BC),Self-tapping screw
A56	87644012	W4×12F(BC),Washer
A57	28175190	Insulator plate
A61	27175254	Leg
A62	834430088	3TTS+8B(BC),Self-tapping screw
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A67	28191604A	Clear plate
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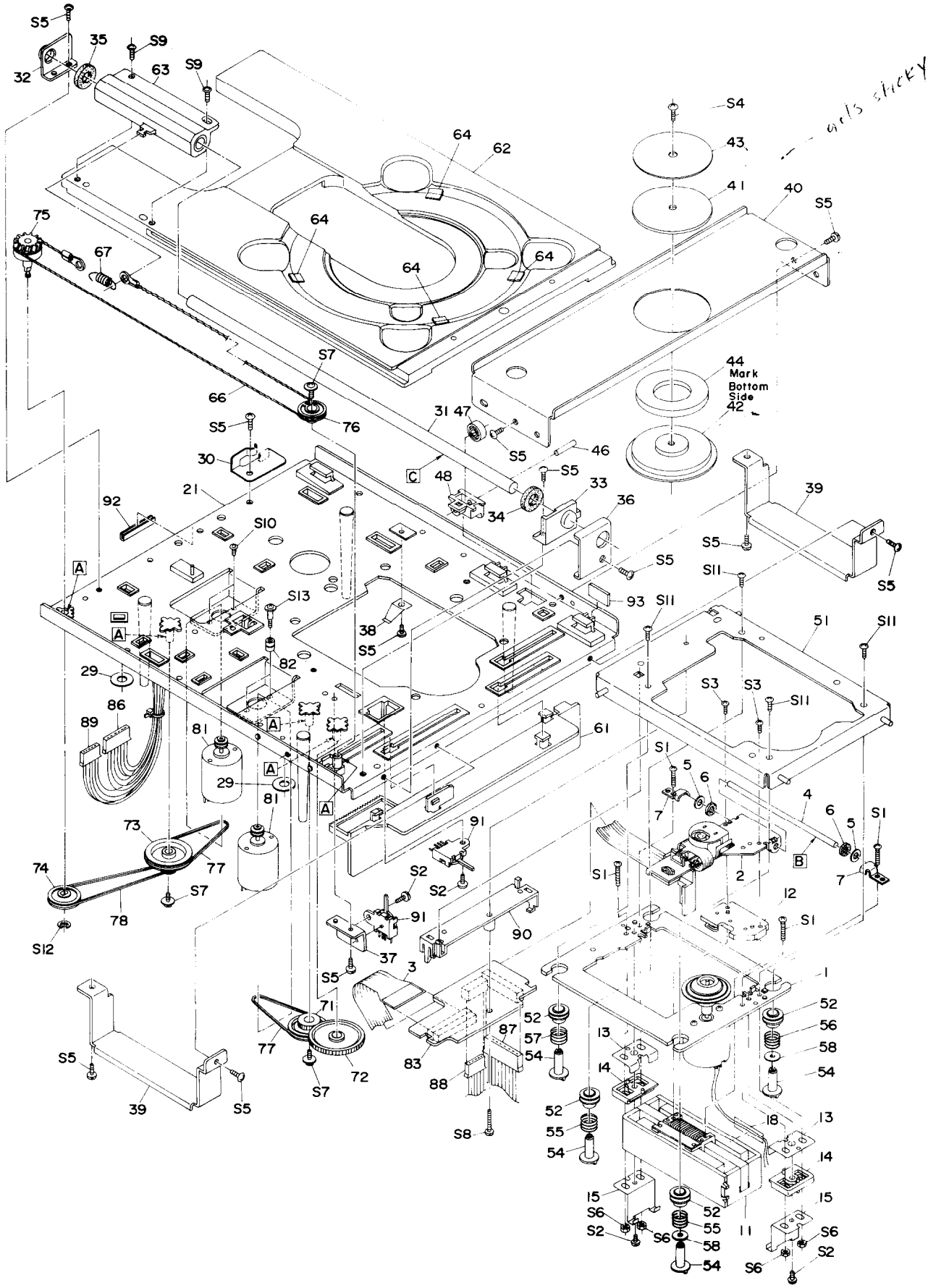
A93	29360807	Label DANGER
A94	29361218	Label LASER <P/W/Q>
A95	29360811A	Label <P>
A96	29361298	Label SEM <P>
A97	29361342	Label SEM/FIN <P>
A98	29360687	Label CLASS1 <P/W/Q>
L901	230910	ESD-R-25DB,Core

REF.NO.	PART NO.	DESCRIPTION
P921	253161,	⚠ AS-UC-6#18,
	253168 or	Power supply cord
	253146	<D>
	253149	⚠ AS-CEE 250V 2.5A,
		Power supply cord <P/W>
	253170	⚠ AS-SAA,Power supply cord <Q>
S902	25065195	⚠ NSS-1288P,Voltage selector switch <W>
T901	2300735	⚠ NPT-1123D,Power transformer <D>
	2300736	⚠ NPT-1123P,Power transformer <P>
	2300737	⚠ NPT-1123DG,Power transformer <W>
	2300738	⚠ NPT-1123Q,Power transformer <Q>
T902	2300739	⚠ NPT-1124D,Power transformer <D>
	2300740	⚠ NPT-1124P,Power transformer <P>
	2300741	⚠ NPT-1124DG,Power transformer <W>
	2300742	⚠ NPT-1124Q,Power transformer <Q>
U1	1H173572-2	NAAR-4272-2,Main circuit pc board ass'y
U2	1H173573-2	NADG-4273-2,Digital circuit pc board ass'y <D>
	1H173573-2A	NADG-4273-2A,Digital circuit pc board ass'y <P/W/Q>
U3	1H173574-2	NAAF-4274-2,Headphone terminal pc board ass'y
U4	1H173575-2	NADIS-4275-2,Display circuit pc board ass'y <D>
	1H173575-2A	NADIS-4275-2A,Display circuit pc board ass'y <P/W/Q>
U5	1H173576-2	NAAF-4276-2,Output volume pc board ass'y
U6	1H173577-2	NAETC-4277-2,Sensor pc board ass'y
U7	1H173578-2	NAPS-4278-2,Power supply pc board ass'y
Z1		NCD-39M,Mechanism ass'y
	260208	Binder

NOTE: <D>:Only 120V model
<P>:Only 230V model
<W>:Only Worldwide model
<Q>:Only 240V model

NOTE: THE COMPONENTS IDENTIFIED BY MARK ⚠ ARE CRITICAL FOR RISK OF FIRE AND ELECTRIC SHOCK. REPLACE ONLY WITH PART NUMBER SPECIFIED.

MECHANISM EXPLODED VIEW



PARTS LIST

REF.NO.	PART NO.	DESCRIPTION
1	27100219A	Chassis ass'y,pickup
2	24110007A	SPU-3011,Optical pickup
3	25134076	NCETC-4076,Flake pc board
4	24506955	Shaft
5	27270322	Spacer
6	27270323	Spacer
7	24506952	Bracket,shaft
11	24502261	SLA2002,Motor,slide
12	24506950	Block,terminal
13	24506953	Bracket LM
14	24506951	Base LM
15	24506954	Holder LM
18	28141068	Cushion
21	27301335D	Chassis L
29	27270212	Spacer
30	27180467	Plate spring
31	27260297A	Shaft,guide
32	27141408	Bracket,shaft
33	27301342	Shaft,base
34	27270324	Spacer
35	27270325A	Spacer
36	27141438	Bracket,base
37	27141409	Bracket,switch
38	27180460	Spring
39	27141440A	Bracket H
40	27301343	Arm
41	28141061A	Cushion CH
42	27301352	Cap CH
43	27301344	Yoke CH
44	28181019A	Magnet CH
46	27260308	Shaft RO
47	27301465A	Roller
48	27190861A	Holder RO
51	27301345A	Chassis,sub
52	27301466A	Cushion rubber
54	27301347A	Spacer,floating
55	27180461	Spring,silver
56	27180462	Spring,green
57	27180463	Spring,yellow
58	27270330	Spacer
61	27301349B	Cam plate
62	27301331-1	Disc tray
63	27301333B	Guide,bearing
64	28141081	Cushion,tray
66	27301391	Rope
67	27180464	Spring,wire
71	27301336	Pulley,gear
72	27301337	Flat wheel
73	27301338	Middle pulley
74	27301339	Pulley
75	27301389	Drive pulley
76	27301341	Flat pulley
77	27301350	Rubber belt S
78	27301351	Rubber belt L
81	1H048902	Motor ass'y
82	27301468	Bush,motor
83	1H169537-2	NAETC-3937-2,Terminal pc board ass'y
86	2009990098A	NSAS-6P0137,Socket
87	2009990099B	NSAS-18P0138,Socket
88	2002391445	NSAS-14P0260,Socket
89	2009990199	NSAS-5P0281,Socket
90	27190775	Holder
91	25065422	NMS-1220,Microswitch
92	28170024	Bushing
93	27270342	Spacer,guide
S1	82112010	2P+10F,Pan head screw
S2	838426088	2.6TTB+8B(BC),Self-tapping screw
S3	838120080	2TTB+8P,Self-tapping screw
S4	833426050	2.6TTP+5P(BC),Self-tapping screw
S5	834430068	3TTS+6B(BC),Self-tapping screw
S6	863120	N-2F,Nut
S7	831126060	2.6TTW+6P(BC),Self-tapping screw
S8	833326148	2.6TTP+14B,Self-tapping screw
S9	834430088	3TTS+8B(BC),Self-tapping screw
S10	82143004	3P+4FN(BC),Pan head screw
S11	838120080	2TTB+8P,Self-tapping screw
S12	8930251S	ES-2.5S,Ring E
S13	801470	Special screw
S14	838426088	2.6TTB+8B(BC),Self-tapping screw

TERMINAL PC BOARD-PARTS LIST

CIRCUIT NO.	PART NO.	DESCRIPTION
P001	25050428	NSCT-18P,Socket
P103A	25055139	NPLG-9P123,Plug
P108A	25055151	NPLG-7P135,Plug

LUBLICATION

POINT	PART NO.	DESCRIPTION
A	260447	G902S
B	260451	#331
C		G947P

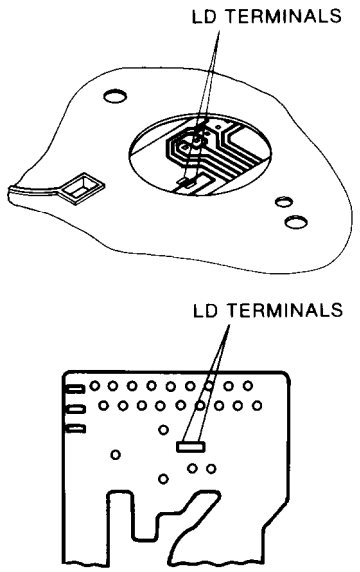
CAUTION ON REPLACEMENT OF PICKUP

The laser diode in the optical pickup block is so sensitive to static electricity, surge current and etc. that the components are liable to be broken down or its reliability remarkably deteriorated.

During repair, carefulley take the following precautions. (The following precautions are included in the service parts).

PRECAUTIONS

1. **Ground for the work-desk.**
   Place a conductive sheet such as a sheet of copper (with impedance lower than $10^6\Omega$) on the work-desk and place the set on the conductive sheet so that the chassis.
2. **Grounding for the test equipment and tools.**
   Test equipments and toolings should be grounded in order that their ground level is the same the ground of the power source.
3. **Grounding for the human body.**
   Be sure to put on a wrist-strap for grounding whose other end is grounded.
   Be particularly careful when the workers wear synthetic fiber clothes, or air is dry.
4. **Select a soldering iron that permits no leakage and have the tip of the iron well-grounded.**
5. **Do not check the laser diode terminals with the probe of a circuit tester or oscilloscope.**



Flake pc board on the pick up

(Care should be taken with the optical pickup.)
The optical pickup is sensitive to static electricity, surge currents, and other high electrical noise, and because there is the possibility of damage to performance, in the handling of the pickup, the utmost care must be taken, particularly with regard to static electricity.

Mechanism ass'y removement
When remove the mechanism ass'y, first short the LD terminals on the pc board and remove the mechanism ass'y.

Optical pickup removement

1. When replacing the optical pickup, first short the LD terminals and remove the connector. Also, when attaching the new optical pickup, after attaching the connector, unsolder the LD terminals.
2. Do not touch the optical pickup object lens with the hands.

PROTECTION OF EYES FROM LASER BEAM DURING SERVICING

This unit employs a laser. Therefore, be sure to follow carefully the instructions below when servicing.

WARNING!!
WHEN SERVICING,DO NOT APROACH THE LASER EXIT WITH THE EYE TOO CLOSELY.IN CASE IT IS NECESSARY TO CONFIRM LASER BEAM EMMISION, BE SURE TO OBSERVE FROM A DISTANCE OF MORE THAN 30cm FROM THE SURFACE OF THE OBJECTIVE LENS ON THE OPTICAL PICKUP BLOCK.

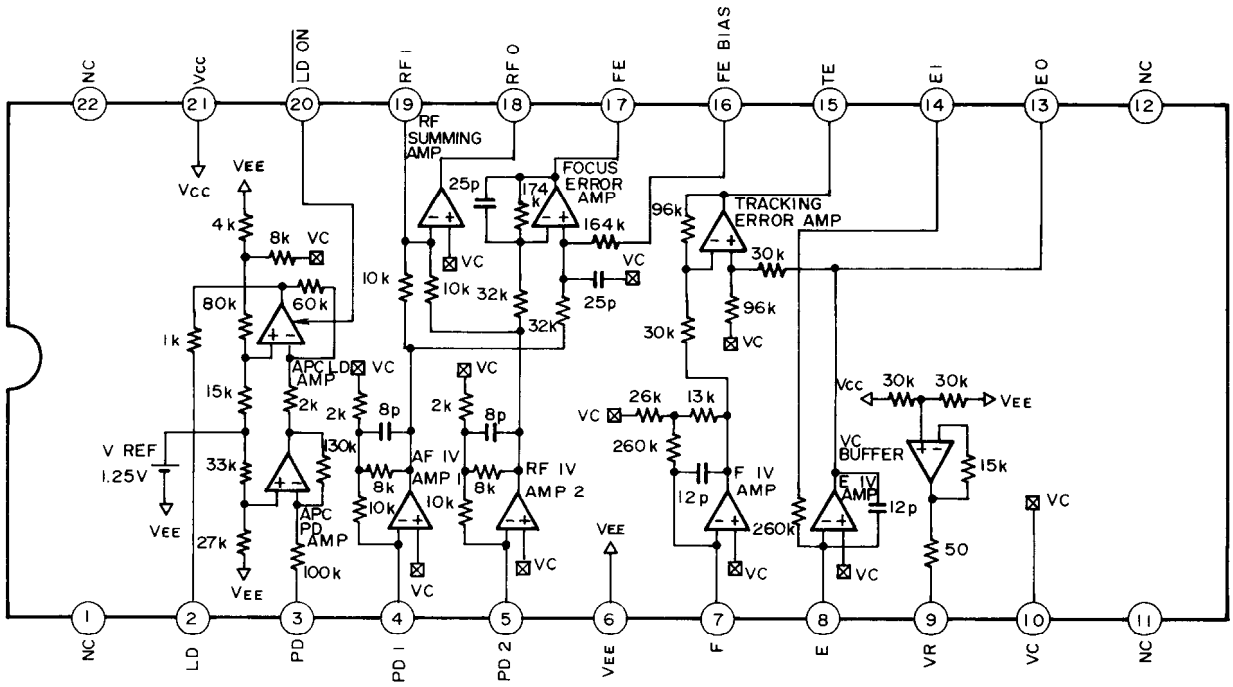
Laser Diode Properties

- Material:Ga AS/GaAlAs
- Wavelength:780nm
- Emission Duration:Continuous
- Laser output:Max. 0.5mW*

*This output is the value measured at a distance about 1.8mm from the objective lens surface on the optical pickup block.

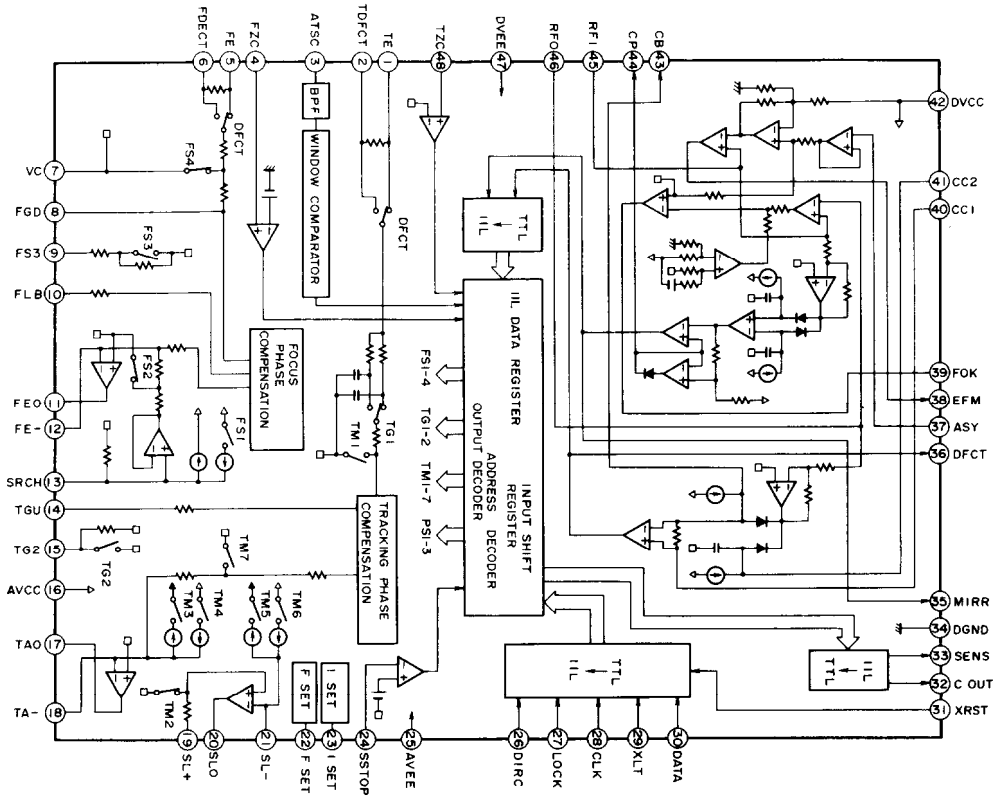
IC BLOCK DIAGRAM AND DESCRIPTIONS

CXA1571S (RF Amplifier)



Pin No.	Symbol	I/O	Description
2	LD	O	Output terminal of APC amplifier.
3	PD	I	Input terminal of APC amplifier.
4	PD1	I	Inversion input terminal for RF I-V amplifier. Connect to photo diode A+C.
5	PD2	I	Inversion input terminal for RF I-V amplifier. Connect to photo diode B+D.
7	F-IN	I	Inversion input terminal for F I-V amplifier. Connect to photo diode F.
8	E-IN	I	Inversion input terminal for E I-V amplifier. Connect to photo diode E.
9	VR	O	DC voltage output of (Vcc+V_{EE})/2.
10	VC	I	Middle point voltage input terminal.
13	EO	O	Monitor output terminal for I-V amplifier E.
14	EI	-	Gain adjustment terminal for I-V amplifier E.
15	TE	O	Tracking error amplifier output terminal. The signal E-F is output from this terminal.
16	FE-BIAS	I	Bias adjustment terminal for non-inversion side of focus error amplifier.
17	FE	O	Focus error amplifier output terminal.
18	RFO	O	RF amplifier output terminal.
19	RFI	I	Inversion input terminal of RF amplifier.
20	LD-ON	I	Change-over terminal for APC amplifier.

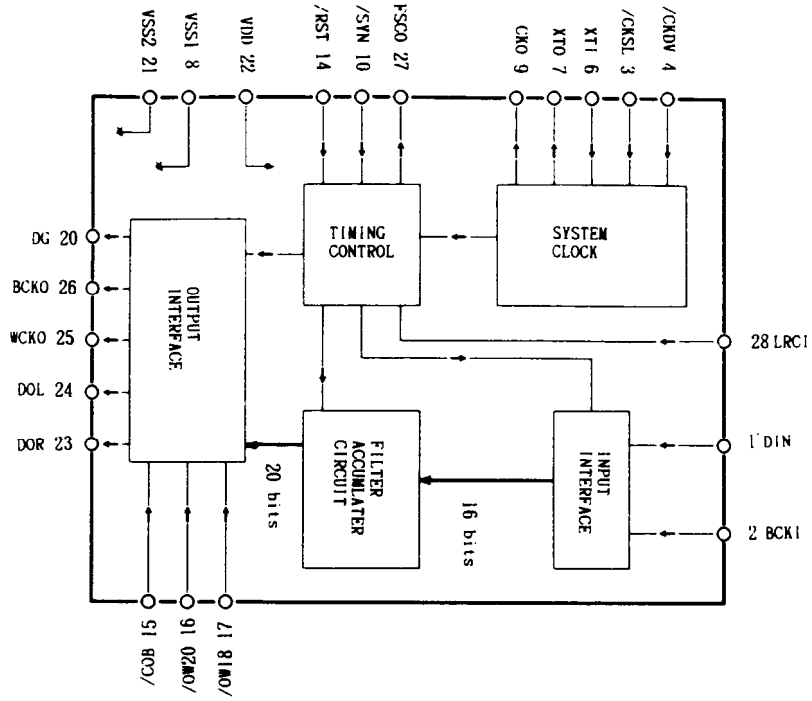
CXA1372S (RF Signal Processor Servo Amplifier)



PIN. NO.	SYMBOL	I/O	DESCRIPTION
1	TE	I	Tracking error input terminal.
2	TDFCT	I	Capacitor connection terminal for time constant when defect.
3	ATSC	I	Window comparator input terminal for ATSC detection.
4	FZC	I	Focus zero-cross comparator input terminal.
5	FE	I	Focus error input terminal.
6	FDFCT	I	Capacitor connection terminal for time constant when detect.
7	VC	I	Mid-point voltage input terminal.
8	FGD	I	Connect the capacitor between pin 9 and this pin when the high frequency gain of focus servo is dropped.
9	FS3	I	Focus servo high frequency gain changeover input terminal.
10	FLB	I	Input terminal for the low frequency boost of focus servo.
11	FEO	O	Focus drive output terminal.
12	FE-	I	Inversion input terminal of focus amplifier.
13	SRCH	I	Time constant terminal to make the focus search waveform.
14	TGU	I	Tracking high frequency gain changeover input terminal.
15	TG2	I	Tracking high frequency changeover input terminal.
17	TAO	O	Tracking drive output terminal.
18	TA-	I	Inversion input terminal of tracking amplifier.
19	SL+	I	No-inversion input terminal of sled amplifier.
20	SLO	O	Sled(slide) drive output terminal.
21	SL-	I	Inversion input terminal of sled amplifier.

PIN. NO.	SYMBOL	I/O	DESCRIPTION
22	FSET	I	Peak setting input of phase correction of focus tracking.
23	ISET	I	This terminal is flowed the current so that the focus search, tracking jump, and sled kick height is decided.
24	SSTOP	I	Inner switch selection input terminal.
26	DIRC	I	This terminal is used when a track jump.
27	LOCK	I	The sled runaway prevention circuit operates at the low level.
28	CLK	I	Serial data transfer clock input from microprocessor.
29	XLT	I	Latch input from microprocessor.
30	DATA	I	Serial data input from microprocessor.
31	XRST	I	Reset input terminal. Active low.
32	C. OUT	O	Signal output to count the track numbers.
33	SENS	O	This terminal outputs FZC, and SSTOP to according command from microprocessor.
35	MIRR	O	Mirror comparator output terminal.
36	DFCT	O	Defect comparator output terminal.
37	ASY	I	Auto asymmetry control input terminal.
38	EFM	O	EFM comparator output terminal.
39	FOK	O	Focus OK comparator output terminal.
40	CC1	O	Defect bottom hold output terminal.
41	CC2	I	Defect bottom hold input terminal from CC1.
43	CB	I	Defect bottom hold capacitor connection terminal.
44	CP	I	Mirror hold capacitor connection terminal.
45	RFI	I	RF summing amplifier input terminal.
46	RFO	O	RF summing amplifier output terminal.
48	TZC	I	Tracking zero-cross comparator input terminal.

SM5813AP (18 bits Oversampling Digital Filter)

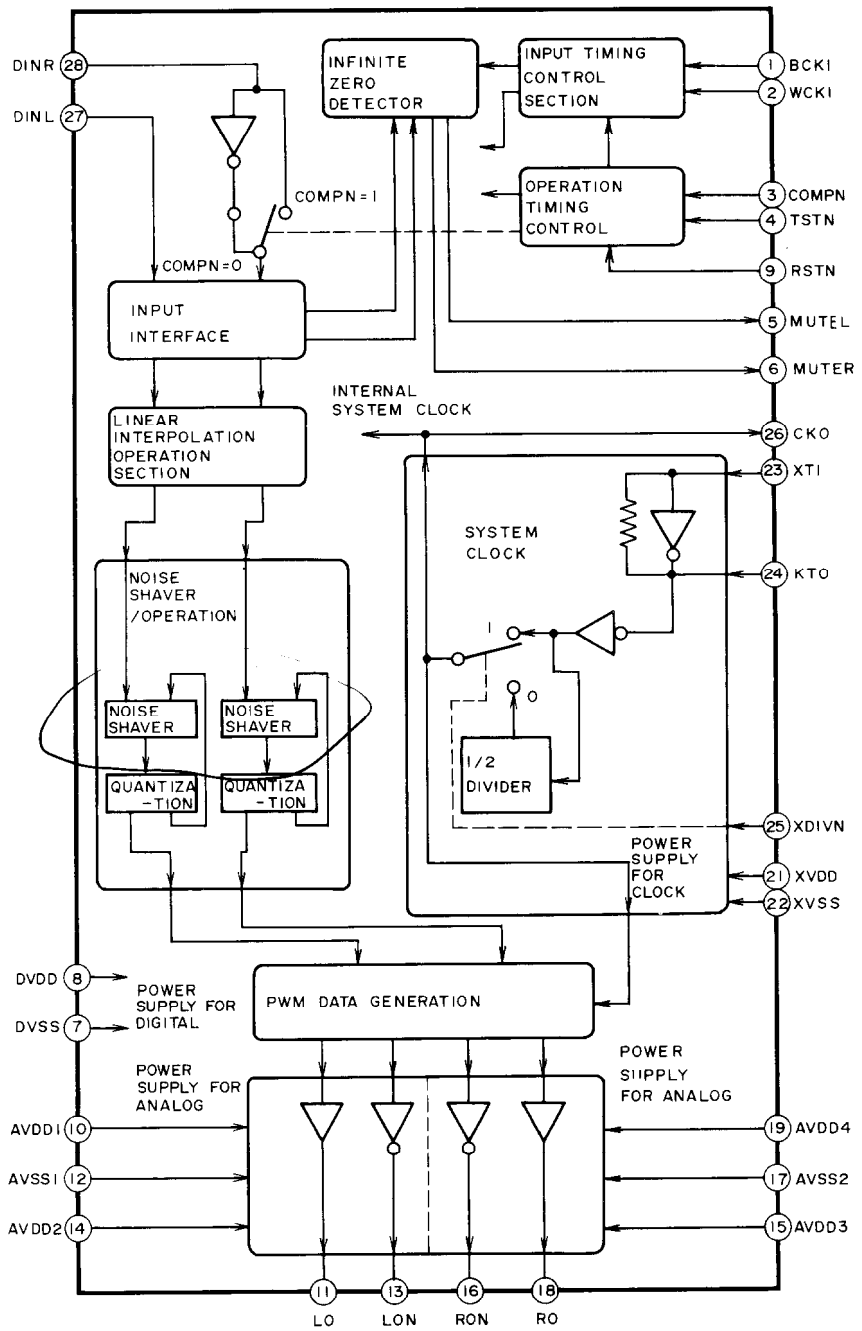


Pin No.	Terminal	I/O	Function
1	DIN	I	Input data
2	BCKI	I	Bit clock of input data
3	/CKSL	I	Input frequency selection terminals of
4	/CKVD	I	terminal XTI (Pin 6)
6	XTI	I	Input section of oscillator section
7	XTO	O	Output section of oscillator section
8	Vss1		Ground terminal
9	CKO	O	Output clock of oscillator section The frequency is same as XTI
10	/SYN	I	Mode selection terminal H:Jitter free L:Forced sync.
14	/RST	I	System reset H:Normal L:Reset
15	/COB	I	H:Complement of 2 L:COB
16	/OW20	I	Output bit numbers selector
17	/OW18	I	
20	DG	O	Deglith control clock
21	Vss2		Ground terminal
22	V_{DD}		Power supply terminal (+5V)
23	DOR	O	8-times oversampling output data of right channel
24	DOL	O	8-times oversampling output data of left channel
25	WCKO	O	Word clock of output data
26	BCKO	O	Bit clock of output data
27	FSCO	O	Internal accumlater timing clock of period fs.
28	LRCI	I	Sample rate clock of input data

Output bit numbers

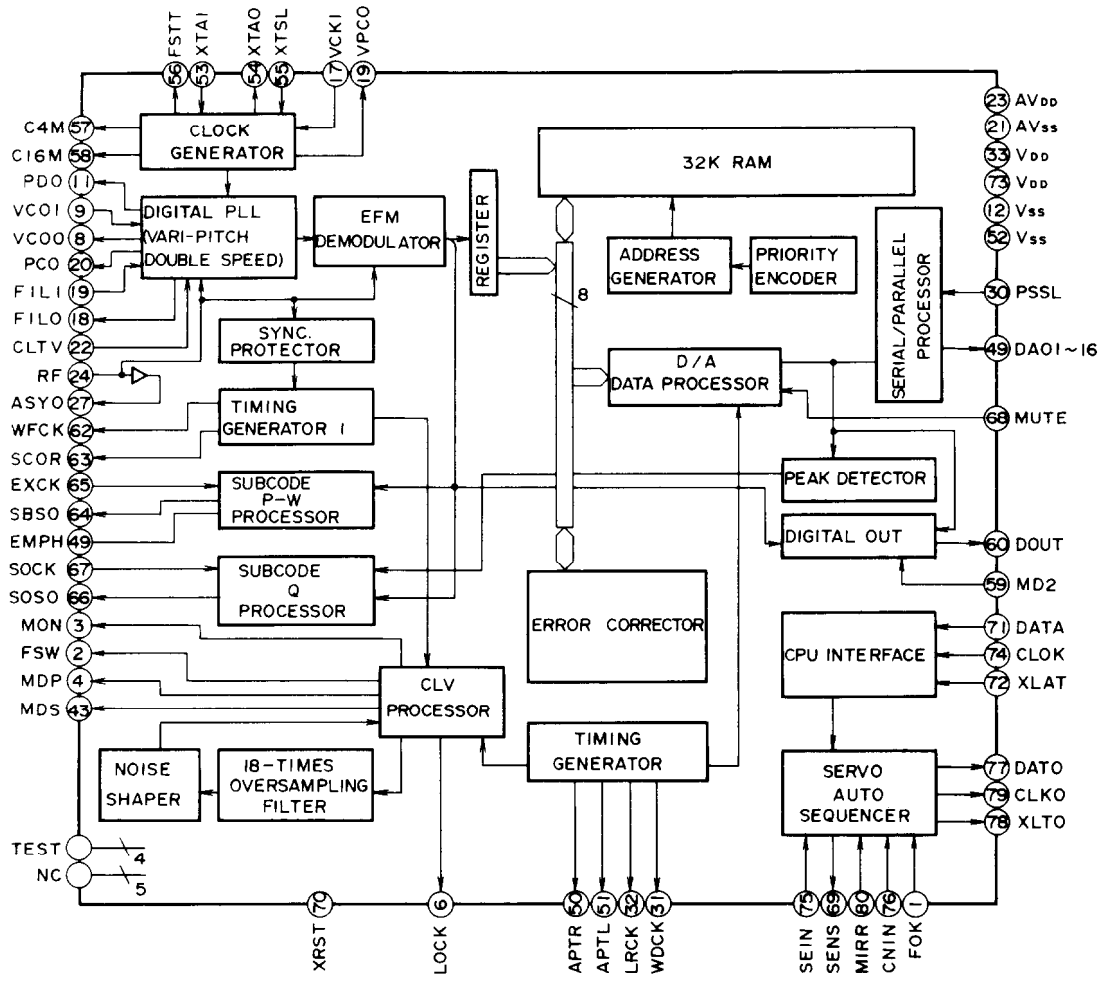
Output bit	16	18	20
/OW18	H	L	H
/OW20	H	H	L

SM5861AP (D/A converter)

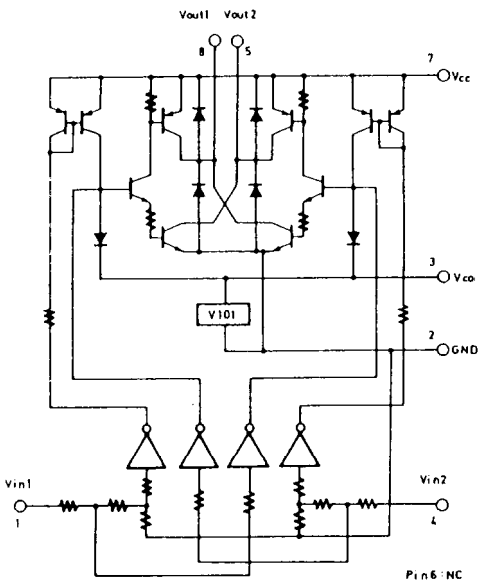


Pin No.	Symbol	Description	Pin No.	Symbol	Description
1	BCKI	Serial input data bit clock	15	AVDD3	5V supply for analogue section
2	WCKI	Input data word clock	16	RON	Data output
3	COMPN	Mode select of PWM output	17	AVSS2	Ground for analogue section
4	TSTN	Test terminal	18	RO	Data output
5	MUTEL	Muting output for left channel	19	AVDD4	Ground for analogue section
6	MUTER	Muting output for right channel	20	NC	
7	DVSS	Ground for digital section	21	XVDD	5V supply for clock section
8	DVDD	5V power supply for digital section	22	XVSS	Ground for clock section
9	RSTN	Reset input	23	XTI	Crystal oscillator input
10	AVDD1	5V supply for analogue section	24	XTO	Crystal oscillator output
11	LO	Data output	25	XDIVN	System clock select
12	AVSS1	Ground for analogue section	26	CKO	Clock output
13	LON	Data output	27	DINL	Serial data input for left channel
14	AVDD2	5V supply for analogue section	28	DINR	Serial data input for right channel

CXD2500AQ (Digital Signal Processor)



LB1630 (Volume Motor Drive)



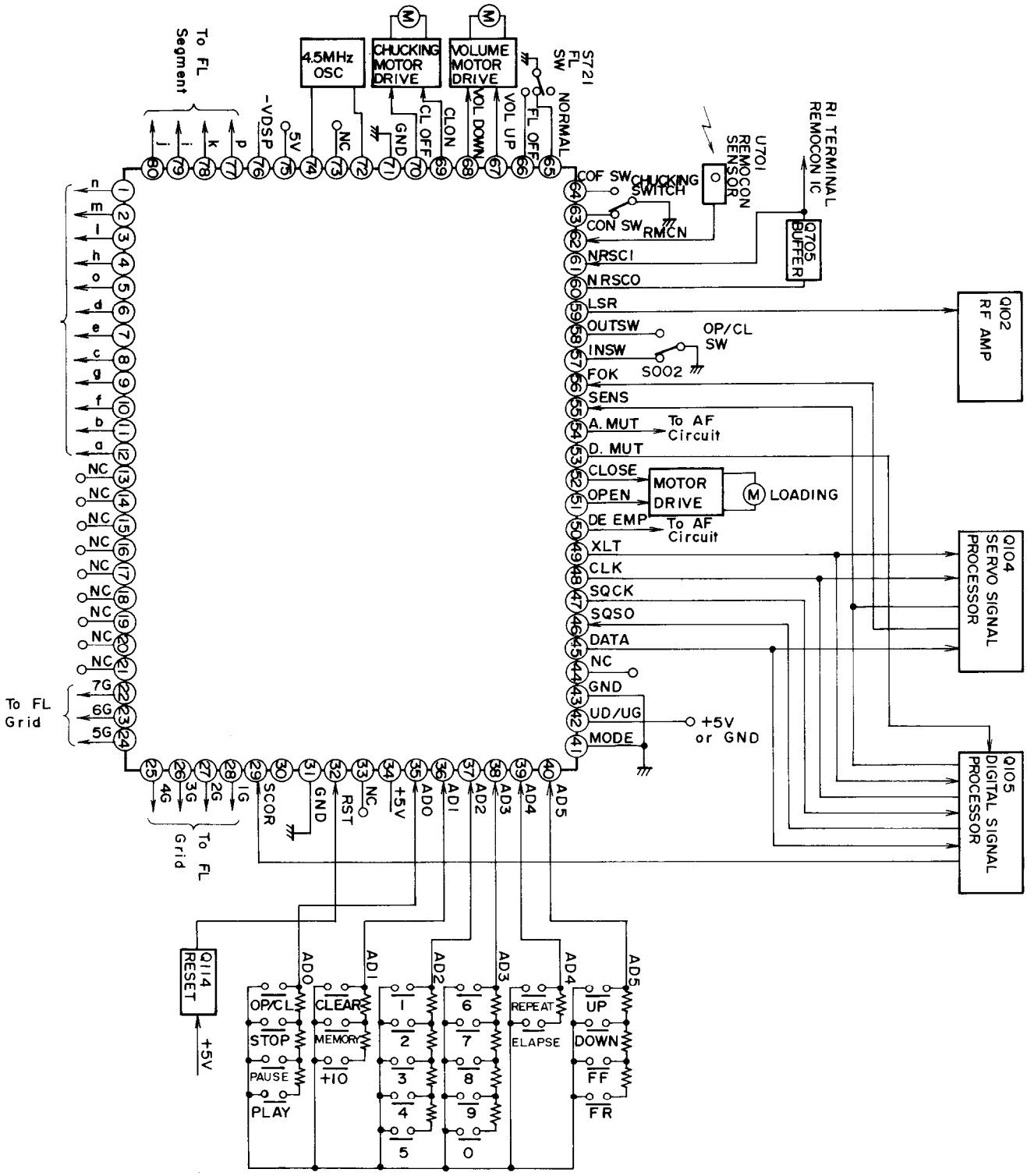
NO.	SYMBOL	I/O	DESCRIPTION
1	FOK	I	Focus OK input
2	FSW	O	Output filter changeover output of spindle motor
3	MON	O	Spindle motor control output
4	MDP	O	Spindle motor servo control
5	MDS	O	Spindle motor servo control
6	LOCK	O	H when GFS is high
7	NC		
8	VCOO	O	Oscillation circuit output for analog FEM PLL
9	VCOI	I	Oscillation circuit input for analog EFM PLL (8.6436MHz)
10	TEST	I	Test terminal
11	PDO	O	Charge pump output for analog EFM PLL
12	Vss		Ground terminal
13-15	NC		
16	VPCO	O	PLL charge pump output for variable pitch
17	VCKI	I	Clock input for variable pitch from VCO (16.934MHz)
18	FILO	O	Filter output for master PLL
19	FILI	I	Filter input for master PLL
20	PCO	O	Charge pump output for master PLL
21	AVss		Analog ground
22	CLTV	I	VCO control voltage input for master
23	AVDD		Analog section power supply(+5V)
24	RF	I	EFM signal input
25	TEST2	I	Connect to the ground.
26	TEST3	I	Connect to the ground.
27	ASYO	O	EFM full swing output
28	TEST4	I	Connect to the ground.
29	NC		
30	PSSL	I	Audio data output mode changeover input. Serial data at L and paraller data at H.
31	WDCK	O	D/A interface for 48 bits slot. Word clock f=2Fs.
32	LRCK	O	D/A interface for 48 bits slot. LR clock f=Fs.
33	VDD		Power supply terminal(+5V)
34-49			Data output terminals

			PSSL=1	PSSL=0
34	DA16	O	DA16	Serial data of 48 bits slot
35	DA15	O	DA15	Bit clock of 48 bits slot
36	DA14	O	DA14	Serial data of 64 bits slot
37	DA13	O	DA13	Bit clock of 68 bits slot
38	DA12	O	DA12	LR clock of 68 bits slot
39	DA11	O	DA11	GTOP output
40	DA10	O	DA10	XUGF output
41	DA09	O	DA09	XPLCK output
42	DA08	O	DA08	GFS output
43	DA07	O	DA07	RFCK output
44	DA06	O	DA06	C2P0 output
45	DA05	O	DA05	XRAOF output
46	DA04	O	DA04	MNT3 output
47	DA03	O	DA03	MNT2 output
48	DA02	O	DA02	MNT1 output
49	DA01	O	DA01	MNT0 output

NO.	SYMBOL	I/O	DESCRIPTION
50	APTR	O	Control output for aperture correction. H when Rch.
51	APTL	O	Control output for aperture correction. H when Lch.
52	Vss		Ground
53	XTAI	I	Crystal oscillation circuit input of 16.9344MHz or 33.8688MHz input
54	XTAO	O	Crystal oscillation circuit output of 16.9344MHz
55	XTSL	I	Crystal selection input terminal. L when 16.9344MHz. H when 33.8688MHz.
56	FSTT	O	2/3 divided output of pins 53 & 54
57	C4M	O	4.2336MHz output
58	C16M	O	16.9344MHz output
59	MD2	I	Digital output control input. On at H & Off at L.
60	DOUT	O	Digital output
61	EMPH	O	Emphasis control output. Active H.
62	WFCK	O	Write frame clock output
63	SCOR	O	Sub-code detection output. H when is detected S0 or S1.
64	SBSO	O	Serial output of sub code(P~W)
65	EXCK	I	Clock input for read out SBSO
66	SQSO	O	Sub Q 80 bits, PCM peak, and level data 16 bits output
67	SQCK	I	Clock input for read out SQSO
68	MUTE	O	Muting control output. Active H.
69	SENS	-	Sens output. Output to microprocessor
70	XRST	I	System reset. Rest at low level.
70	DATA	I	Serial data input from microprocessor
72	XLTA	I	Latch input from microprocessor. Latch the serial data at trailing.
73	VDD		Power supply
74	CLOK	I	Serial data transfer clock input from microprocessor
75	SEIN	I	Sens input from SSP
76	CNCI	I	Track jump numbers count signal input
77	DATO	O	Serial data output to SSP
78	XLTO	O	Serial data latch output to SSP. Latch at trailing.
79	CLKO	O	Serial data transfer clock output to SSP
80	MIRR	I	Mirror signal input

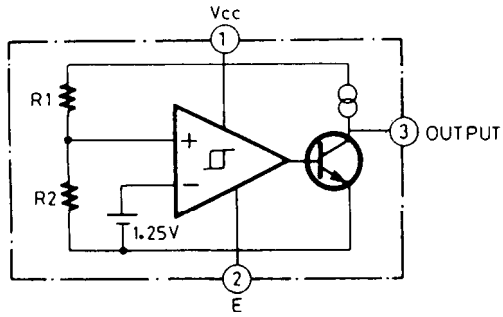
Note:SSP:Q104 CXA1372S

CXP50116-166 (Microprocessor)

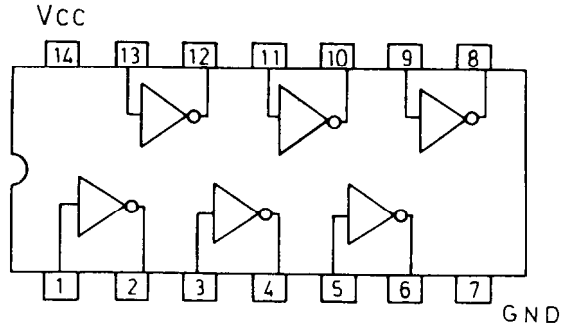


Pin No.	Symbol	I/O	Descriptions
1~12	n, m, l, h, o, d e, c, g, t, b, a	O	Fluorescent indicator tube segment output terminals. Active high.
22~28	7G~1G	O	Fluorescent indicator tube grid output terminals. Active high.
29	SCOR	I	Sub code sink input terminal. Leading pulse (75Hz) is input during play.
32	XRST	I/O	Reset input terminal. Reset at low level when the power switch turns on.
34	VDD		+5V power supply.
35~40	AD0~AD5	I	A/D converter input terminals for key input.
42	UD/UG	I	Indicator method changeover input when the power switch turns on.
44	SC	O	Servo system serial command clock (CLK) and sub code Q read clock (SQCK) output terminal.
45	DATA	O	Data output terminal of serial command of servo system.
46	SQSO	I	Input terminal of sub code Q.
47	SQCK	O	Read clock output control terminal of sub code Q.
48	CLK	O	Clock output control terminal of serial command of servo system.
49	XLT	O	Latch command output terminal of serial command of servo system.
50	DEEMP	O	Emphasis switch control output terminal. Active high.
51	OPEN	O	Tray open operation output terminal. Open at low level.
52	CLOSE	O	Tray close operation output terminal. Close at low level.
53	D. MUT	O	Digital muting control output terminal.
54	A. MUT	O	Audio muting control output terminal. Muting turns off at low level.
55	SENSE	I	This terminal is input the conditions of servo system according serial command of servo system.
56	FOK	I	Focus OK input terminal. This terminal is the high level when focus servo operates.
57	IN SW	I	Close switch input terminal. L when the close switch turns on.
58	OUT SW	I	Open switch inut terminal. L when the open switch turns on.
59	LSR	O	Laser diode ON/OFF control output terminal. ON at low level.
60	NRSC OUT	O	System code output terminal.
61	NRSC IN	I	System code input terminal.
62	RMCN	I	Input terminal from remote control sensor.
63,64	CON/ COF SW	I	Chucking switch detection input terminal
65	DIMMER SW NORMAL	I	The FL tube lights on normally when this terminal is the low level.
66	DIMMER SW OFF	I	The FL tube lights off when this terminal is the low level.
67	VOL DOWN	O	Volume control output terminal. Active "H".
68	VOL UP	O	Volume control output terminal. Active "H".
69, 70	CL ON/OFF	O	Chucking motor contrul output terminal
71	V_{SS}		Connect to GND.
72, 74	OSC	I	X'tal connection terminal
76	−32V		Power supply terminal for fluorescent indicator tube.
77~80	p, k, i, j	O	Fluorescent indicator tube segment output terminals. Active high.

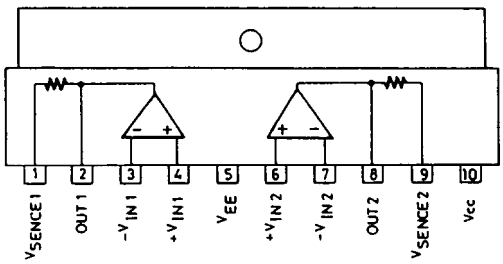
M51943ASL (System reset)



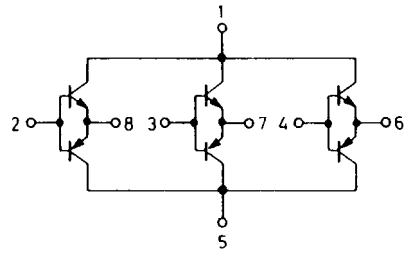
74HCU04P (Hex inverters)



LA6510 (Power operation amp.)



STA341M-L (Transistor array)



ADJUSTMENT PROCEDURES

Instruments required

Dual trace oscilloscope, Frequency counter, AF oscillator, Test disc (SONY YEDS-18), AC voltmeter, and Socket P4(Part no. 25050138)

1.Slide Balance Adjustment

1.Connect the audio oscillator to P112 SLD and the oscilloscope to P112 SLD and VS as shown below.

2.Set the output of oscillator to the spuare wave,5Hz, 2Vp-p.

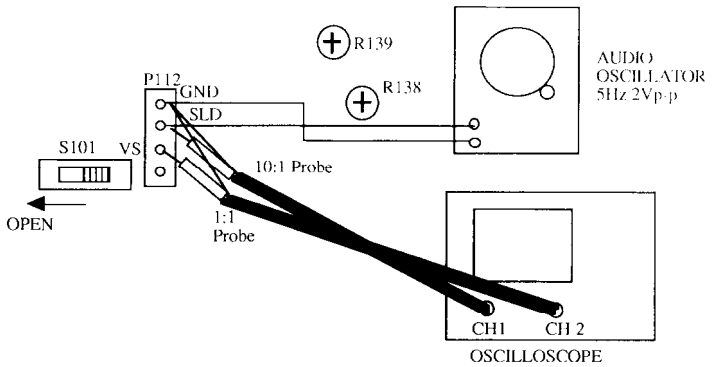
3.Turn the switch S101 to OPEN.

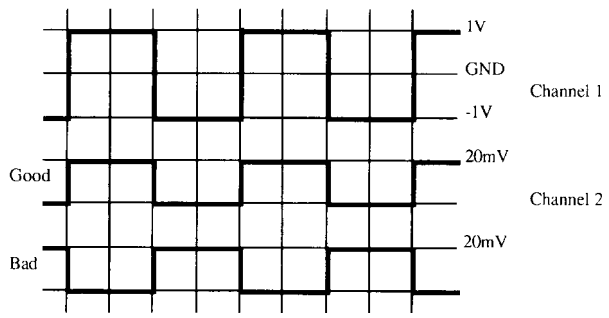
4.Turn the power switch to ON.

5.Confirm that the optical pickup does not move.(If it moves,control it by hand.)

6.Adjust the semi-fixed resistor R139 so that the waveformes of channels 1 and 2 become the same phase.

After adjustment,remove the audio oscillator and oscilloscope.





2.Slide Offset Adjustment

1.Connect the oscilloscope to P112 SLD.

2.Turn S101 to SHORT.

3.Adjust the semi-fixed resistor R138 so that the waveform on the oscilloscope becomes 0V.

3.Focus Offset Adjustment

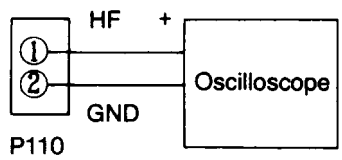
Load the test disc YEDS-18 on the tray and play the track 2.

Connect the oscilloscope to the terminal P110.

Adjust R111 so that the waveform on the oscilloscope becomes maximum.

When the output is broad,set R111 to the mechanical center.

Photo 1



4. Tracking offset adjustment

Load the test disc YEDS-18 on the tray and play the track 2.
Turn R118 to minimum position. (Counter clockwise)
Connect the oscilloscope across pin 3 (TR) of P111 and P110. (Ground)
Adjust R115 until the center of tracking error signal on the oscilloscope becomes GND level.
Turn R118 to the mechanical center.
After adjustment, disconnect the oscilloscope.

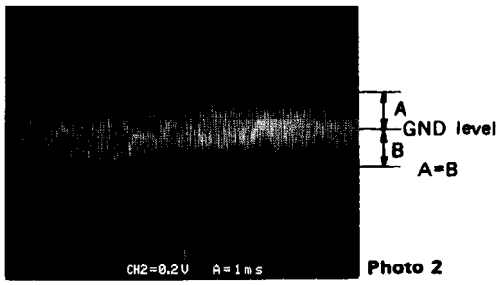
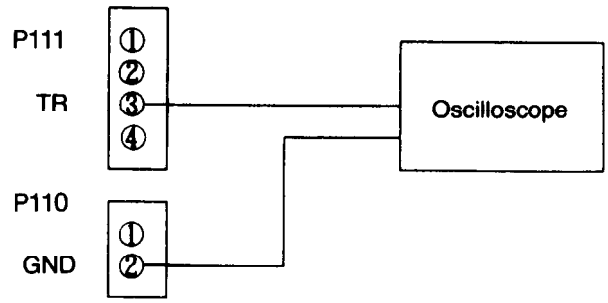


Photo 2



5. Focus gain adjustment

Set the output of AF oscillator to 800Hz, 1~1.5Vp-p.
Play the track 2 of test disc.
Connect the oscilloscope and the AF oscillator as shown below.

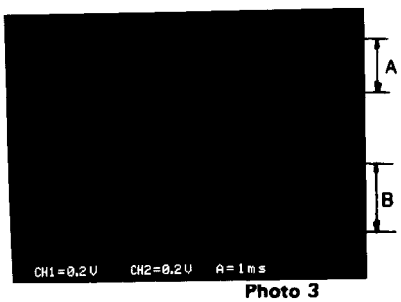
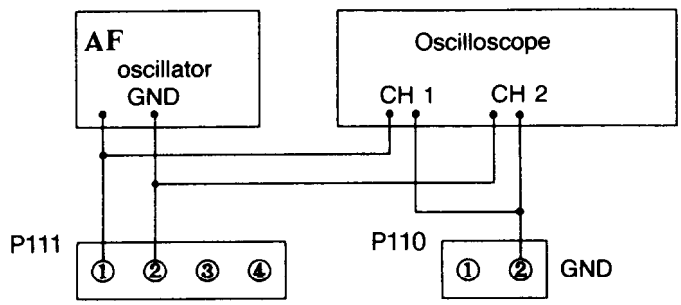


Photo 3



Adjust R116 until 800Hz components of channels 1 and 2 on oscilloscope become same level.
After adjustment, disconnect the AF oscillator and the oscilloscope.

6. Tracking gain adjustment

Set the output of AF oscillator to 1.2kHz, 1~1.5Vp-p.
Play the track 2 of test disc.
Connect the oscilloscope and the AF oscillator as shown below.

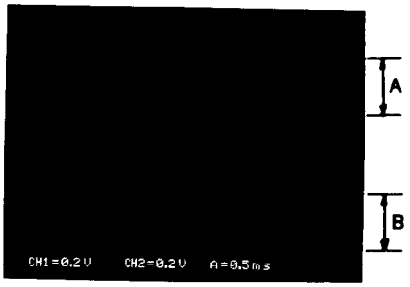
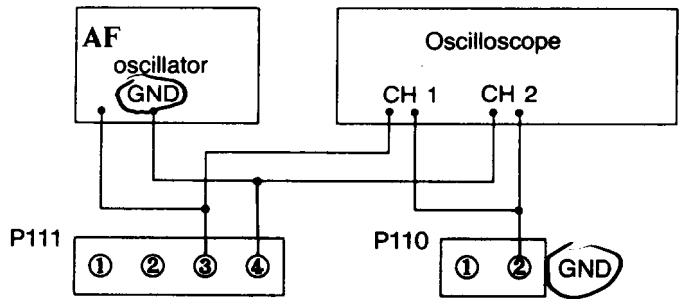
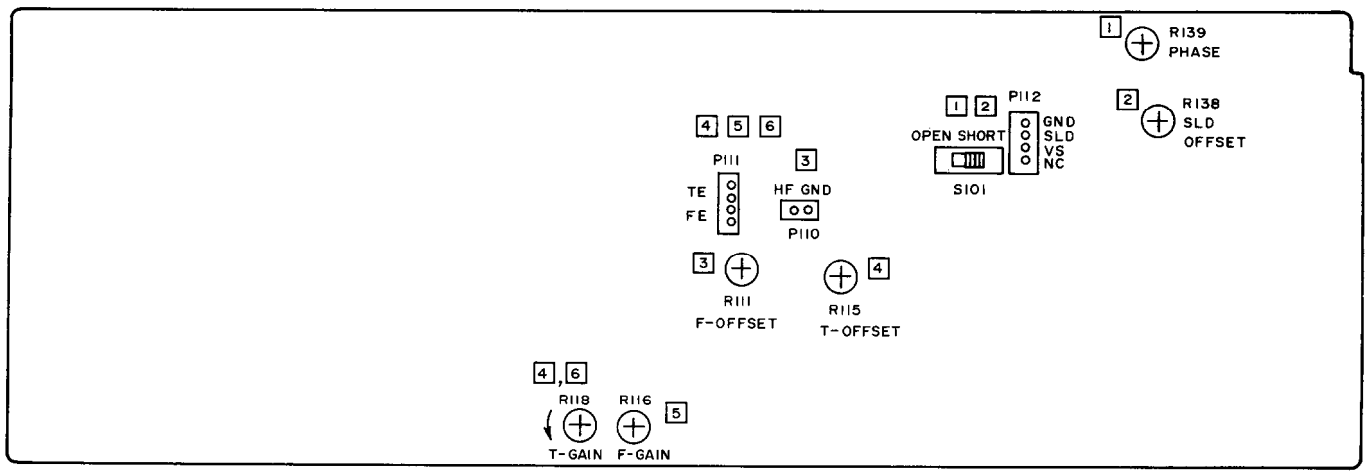


Photo 4

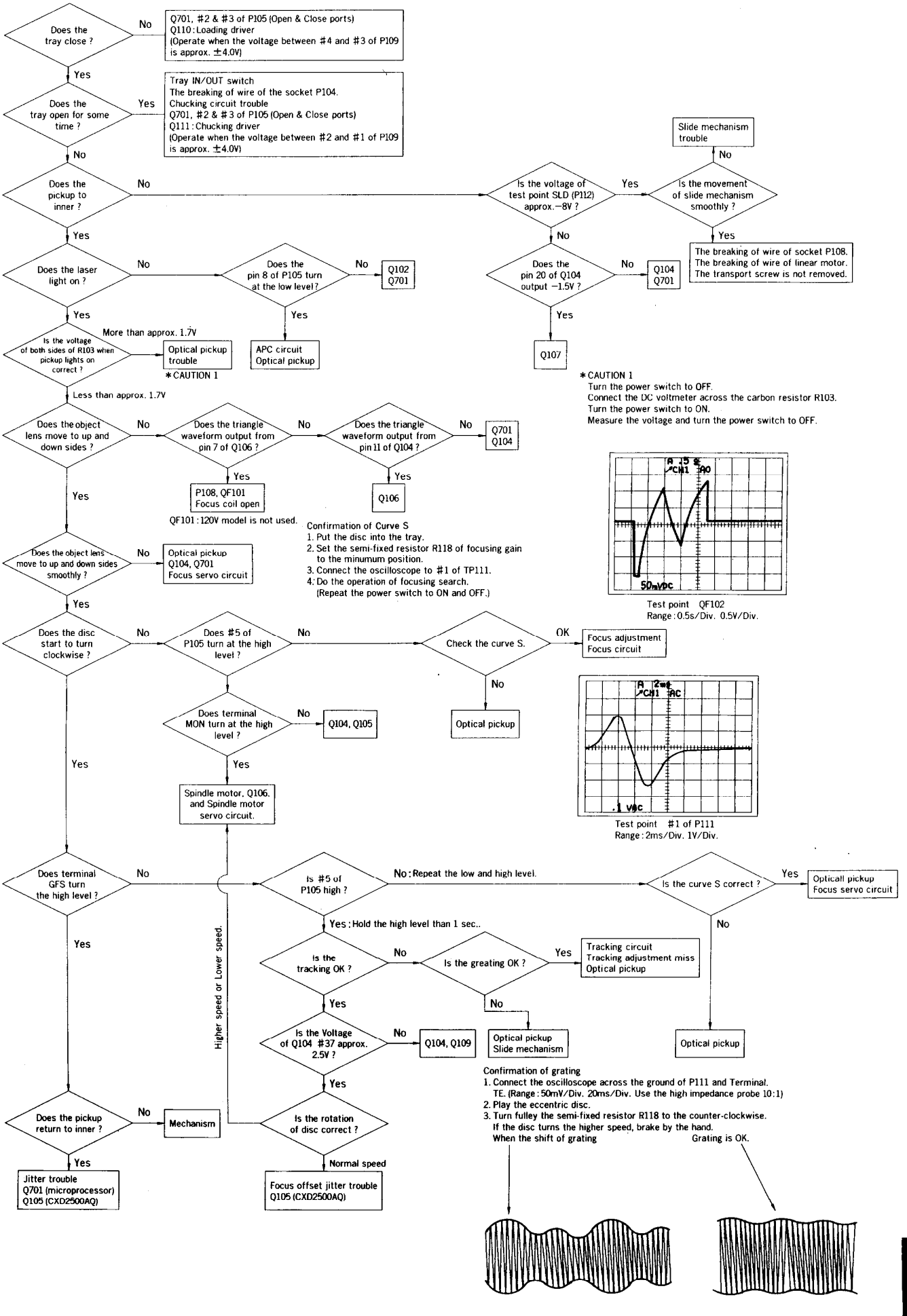


Adjust R118 until 1.2kHz components of channels 1 and 2 on oscilloscope become same level.
After adjustment, disconnect the AF oscillator and the oscilloscope.

After adjustment, confirm that the center of tracking error signal becomes GND level.



TROUBLESHOOTING GUIDE


Does the tray close ?
No
Q701, #2 & #3 of P105 (Open & Close ports)
Q110 : Loading driver
(Operate when the voltage between #4 and #3 of P109 is approx. ±4.0V)
Yes
Does the tray open for some time ?
Yes
Tray IN/OUT switch
The breaking of wire of the socket P104.
Chucking circuit trouble
Q701, #2 & #3 of P105 (Open & Close ports)
Q111 : Chucking driver
(Operate when the voltage between #2 and #1 of P109 is approx. ±4.0V)
No
Does the pickup to inner ?
No
Is the voltage of test point SLD (P112) approx.−8V ?
Yes
Is the movement of slide mechanism smoothly ?
Slide mechanism trouble
No
Yes
The breaking of wire of socket P108.
The breaking of wire of linear motor.
The transport screw is not removed.
No
Does the pin 20 of Q104 output −1.5V ?
No
Q104
Q701
Yes
Q107
Yes
Does the laser light on ?
No
Does the pin 8 of P105 turn at the low level?
No
Q102
Q701
Yes
APC circuit
Optical pickup
Yes
Is the voltage of both sides of R103 when pickup lights on correct ?
More than approx. 1.7V
Optical pickup trouble
*CAUTION 1
Less than approx. 1.7V
*CAUTION 1
Turn the power switch to OFF.
Connect the DC voltmeter across the carbon resistor R103.
Turn the power switch to ON.
Measure the voltage and turn the power switch to OFF.
Does the object lens move to up and down sides ?
No
Does the triangle waveform output from pin 7 of Q106 ?
No
Does the triangle waveform output from pin 11 of Q104 ?
No
Q701
Q104
Yes
P108, QF101
Focus coil open
QF101 : 120V model is not used.
Yes
Q106
Confirmation of Curve S
1. Put the disc into the tray.
2. Set the semi-fixed resistor R118 of focusing gain to the minumum position.
3. Connect the oscilloscope to #1 of TP111.
4. Do the operation of focusing search.
(Repeat the power switch to ON and OFF.)
Test point QF102
Range : 0.5s/Div. 0.5V/Div.
Yes
Does the object lens move to up and down sides smoothly ?
No
Optical pickup
Q104, Q701
Focus servo circuit
Yes
Does the disc start to turn clockwise ?
No
Does #5 of P105 turn at the high level ?
No
Check the curve S.
OK
Focus adjustment
Focus circuit
No
Optical pickup
Does terminal MON turn at the high level ?
No
Q104, Q105
Yes
Yes
Spindle motor, Q106, and Spindle motor servo circuit.
Test point #1 of P111
Range : 2ms/Div. 1V/Div.
Yes
Does terminal GFS turn the high level ?
No
Is #5 of P105 high ?
No : Repeat the low and high level.
Is the curve S correct ?
Yes
Optical pickup
Focus servo circuit
Yes : Hold the high level than 1 sec..
No
Yes
Is the tracking OK ?
No
Is the greating OK ?
Yes
Tracking circuit
Tracking adjustment miss
Optical pickup
No
Yes
Is the Voltage of Q104 #37 approx. 2.5V ?
No
Q104, Q109
Optical pickup
Slide mechanism
Optical pickup
Higher speed or Lower speed.
Confirmation of grating
1. Connect the oscilloscope across the ground of P111 and Terminal. TE. (Range : 50mV/Div. 20ms/Div. Use the high impedance probe 10:1)
2. Play the eccentric disc.
3. Turn fulley the semi-fixed resistor R118 to the counter-clockwise. If the disc turns the higher speed, brake by the hand.
When the shift of grating
Grating is OK.
Yes
Does the pickup return to inner ?
No
Mechanism
Yes
Jitter trouble
Q701 (microprocessor)
Q105 (CXD2500AQ)
Is the rotation of disc correct ?
Normal speed
Focus offset jitter trouble
Q105 (CXD2500AQ)

PC BOARD PARTS LIST

MODEL DX-706

MAIN CIRCUIT PC BOARD (NAAR-4272-1)

CIRCUIT NO.	PART NO.	DESCRIPTION
	ICs	
Q116	24120031	TOTX178
Q302	222755	74HCU04P
Q401,Q402	22240520	SM5861AP
Q403-Q408	222902	NJM5532D-D
Q417	222654	NJM4556D
Q501	22240288	SM5813AP
Q953	222811	NJM4558D-D
Q954,Q955	222780053	78L05
Q956	222780055MIT	M5F78M05
	Transistors	
Q409,Q410	2213090 or	DTA114YS or
Q415,Q416	2213590	RN2207
Q411,Q412	2212524 or	2SK363-GR or
	2212525	2SK363-BL
Q413,Q414	2211705 or	2SD655-E or
	2211706	2SD655-F
Q503	221281 or	DTC114YS or
Q601,Q604	2213570	RN1207
Q504	2211254 or	2SC1815-Y or
	2211255	2SC1815-GR
Q602	2213090 or	DTA114YS or
	2213590	RN2207
Q603	2211945	2SK246-GR
Q951	2201284,	2SD882-R,
	2201285 or	2SD882-Q or
	2201286	2SD882-P
Q952	2201274,	2SB772-R,
	2201275 or	2SB772-Q or
	2201276	2SB772-P
	Diodes	
D601,D607	223163	1SS133
D608,D611	223163	1SS133
D612	224450822	MTZ8.2B
D613	223163	1SS133
D951-D954	22380045	RL-203
	Cores	
L102,R303	230906	BL02RN2-R62
R305,R306	230906	BL02RN2-R62
	Coil	
L301	231023	NCH-1062
	X'tal	
X301	3010159	AT-38-169
	Capacitors	
C191	354744709	47 μ F,16V,Elect.
C402,C403	393021017	100 μ F,6.3V,Elect.
C405-C408	374722234	0.022 μ F±5%,50V,Plastic
C409,C410	393021017	100 μ F,6.3V,Elect.
C415,C416	391222217	220 μ F,6.3V,Elect.
C417,C418	374722234	0.022 μ F±5%,50V,Plastic
C423	374722734	0.027 μ F±5%,50V,Plastic
C425-C428	373302714	270pF±5%,125V,Plastic
C429,C430	373301014	100pF±5%,125V,Plastic
C431-C434	393144707	47 μ F,16V,Elect.
C437,C438	374722224	2200pF±5%,50V,Plastic
C439,C440	374722734	0.027 μ F±5%,50V,Plastic
C443,C444	374722224	2200pF±5%,50V,Plastic
C449,C450	374722224	2200pF±5%,50V,Plastic
C451,C452	372122024	2000pF±5%,50V,Styrole
C453,C454	373301014	100pF±5%,125V,Plastic
C455-C458	393144707	47 μ F,16V,Elect.
C459,C460	374722734	0.027 μ F±5%,50V,Plastic
C461,C462	393154717	470 μ F,25V,Elect.
C463,C464	374722734	0.027 μ F±5%,50V,Plastic
C465,C466	374722224	2200pF±5%,50V,Plastic
C467,C468	374722234	0.022 μ F±5%,50V,Plastic
C469-C472	373301014	100pF±5%,125V,Plastic
C474	374722234	0.022 μ F±5%,50V,Plastic
C475,C476	393144707	47 μ F,16V,Elect.
C477-C480	373302714	270pF±5%,125V,Plastic
C481,C482	373301014	100pF±5%,125V,Plastic
C503	393022217	220 μ F,6.3V,Elect.
C508,C510	393021017	100 μ F,6.3V,Elect.
C603	393180107	1 μ F,50V,Elect.
C605	374724734	0.047 μ F±5%,50V,Plastic
C606	374722234	0.022 μ F±5%,50V,Plastic
C951,C952	374721044	0.1 μ F±5%,50V,Plastic
C953	374722244	0.22 μ F±5%,50V,Plastic
C954,C955	393154727	4700 μ F,25V,Elect.
C956,C957	374722734	0.027 μ F±5%,50V,Plastic
C958	393122217	220 μ F,6.3V,Elect.
C960-C962	393144707	47 μ F,16V,Elect.
C963,C964	374721044	0.1 μ F±5%,50V,Plastic
C967,C968	393144717	470 μ F,16V,Elect.
C971	393144707	47 μ F,16V,Elect.
C974	374722734	0.027 μ F±5%,50V,Plastic
	Resistors	
R951,R952	442520394	3.9ohm,1/2W,Metal oxide film
	Relay	
RL601	25065174	NRL-2P1A-DC12-09
	Terminals	
P111	25045172	HSJ1003-01-020
P401	25045351	NPJ-4PDWR197 CE026
	Plugs	
P102	25055148	NPLG-4P132
P107	25055154	NPLG-10P138
P402	25055150	NPLG-6P134
	Sockets	
JS401	25050267	NSCT-3P95
	2009990132	NSAS-2P0208
	Holder	
	27190751	

DIGITAL CIRCUIT PC BOARD (NADG-4273-1/1A)

CIRCUIT NO.	PART NO.	DESCRIPTION
	ICs	
Q102	22240404	CXA1571S
Q104	22240366	CXA1372S
Q105	22240487	CXD2500AQ
Q106	22240168	STA341M-L
Q107	222090	S2FR04
Q109	22240033	LA6500
Q110,Q111	22240034	LA6510
Q114	22240018	M51943ASL
Q902	222790055MIT	M5F79M05
Q903	222780055MIT	M5F78M05
	Transistors	
Q101,Q113	2211503 or	2SA950-O or
Q904	2211504	2SA950-Y
Q103	221281 or	DTC114YS or
	2213570	RN1207
Q112	2211163 or	2SC2120-O or
	2211164	2SC2120-Y
Q115	2211454 or	2SA1015-Y or
	2211455	2SA1015-GR
	Diodes	
D101,D903	223163	1SS133
D102,D103	224451102	MTZ11B

CIRCUIT NO.	PART NO.	DESCRIPTION
	Diodes	
D901	22380039	1D4B42
D904	224452702 or	MTZ27B or
	224652702	HZ27EB2
	Coil	
L101	231023	NCH-1062
	Core	
L102	230906	BL02RN2-R62
	Capacitors	
C101,C102	393121017	100 μ F,6.3V,Elect.
C103	374724724	4700pF±5%,50V,Plastic
C105,C107	393121017	100 μ F,6.3V,Elect.
C108,C110	374721044	0.1 μ F±5%,50V,Plastic
C111	374724734	0.047 μ F±5%,50V,Plastic
C112	374721034	0.01 μ F±5%,50V,Plastic
C113	374722224	2200pF±5%,50V,Plastic
C114-C116	374721044	0.1 μ F±5%,50V,Plastic
C118	354781009	10 μ F,50V,Elect.
C119,C123	374721044	0.1 μ F±5%,50V,Plastic
C121,C128	393121017	100 μ F,6.3V,Elect.
C124	354780229	2.2 μ F,50V,Elect.
C125	374721034	0.01 μ F±5%,50V,Plastic
C126	393180107	1 μ F,50V,Elect.
C127	354763309	33 μ F,35V,Elect.
C130,C132	374721034	0.01 μ F±5%,50V,Plastic
C131	374724724	4700pF±5%,50V,Plastic
C135	374722234	0.022 μ F±5%,50V,Plastic
C136,C137	374721034	0.01 μ F±5%,50V,Plastic
C138	393121017	100 μ F,6.3V,Elect.
C140	374721524	1500pF±5%,50V,Plastic
C141,C147	374721044	0.1 μ F±5%,50V,Plastic
C142	393022217	220 μ F,6.3V,Elect.
C146	374721034	0.01 μ F±5%,50V,Plastic
C148,C163	393144707	47 μ F,16V,Elect.
C149	374721024	1000pF±5%,50V,Plastic
C151-C153	393144707	47 μ F,16V,Elect.
C161	374722234	0.022 μ F±5%,50V,Plastic
C162	374724734	0.047 μ F±5%,50V,Plastic
C165,C166	393144707	47 μ F,16V,Elect.
C167,C168	393141017	100 μ F,16V,Elect.
C903,C904	374721044	0.1 μ F±5%,50V,Plastic
C905,C906	354752229	2200 μ F,25V,Elect.
C909,C910	391222217	220 μ F,6.3V,Elect.
C911,C912	374722234	0.022 μ F±5%,50V,Plastic
C919	374721044	0.1 μ F±5%,50V,Plastic
C920,C921	354784709	47 μ F,50V,Elect.
	Resistors	
R111	5210060	N06HR2.2KBD,Semi-fixed
R115,R116	5210066	N06HR22KBD,Semi-fixed
R118	5210066	N06HR22KBD,Semi-fixed
R138	5210064	N06HR10KBD,Semi-fixed
R139	5210001	N06HR100BDM,Semi-fixed
	Plugs	
P101	25055150	NPLG-6P134
P103	25055139	NPLG-9P123
P104	25055149	NPLG-5P133
P105	25055156	NPLG-12P140
P106	25055154	NPLG-10P138
P108	25055151	NPLG-7P135
P109	25055150	NPLG-6P134
P110	25055038	NPLG-2P29
P111,P112	25055045	NPLG-4P33
	Sockets	
P102	2009990192	NSAS-8P0258
P107	2009990193	NSAS-20P0259

CIRCUIT NO.	PART NO.	DESCRIPTION
	IC protectors	
QF101,QF102	252112	⚠ ICPN15 <P/W>
	Switch	
S101	25065364	NSS-12138

HEADPHONE TERMINAL PC BOARD (NAAF-4274-1)

CIRCUIT NO.	PART NO.	DESCRIPTION
C483,C484	374721024	1000pF±5%,50V,Plastic capacitors
P403	25045221	HLJ0540-01-410,Terminal

OUTPUT VOLUME PC BOARD (NAAF-4276-1)

CIRCUIT NO.	PART NO.	DESCRIPTION
P401A	2009990191	NSAS-12P0257,Socket
P701	25055149	NPLG-5P133,Plug
R491,R492	5104280	N16RGM20KB30F,Variable resistor
S721	25030331	NRSF-123-30SRRU,Rotary switch

SENSOR PC BOARD (NAETC-4277-1)

CIRCUIT NO.	PART NO.	DESCRIPTION
Q701	24130003	GP1U50XS,IC
C718	354744709	47 μ F,16V,Elect. capacitor

DISPLAY CIRCUIT PC BOARD (NADIS-4275-1/1A)

CIRCUIT NO.	PART NO.	DESCRIPTION
	FL tube	
Q702	212101	7-BT-151GK
	ICs	
Q701	22240521	CXP50116-166
Q703	222963 or	LB1630 or
	22240322	LB1639
	Transistors	
Q704	2212132 or	2SC2021-R or
	2212133	2SC2021-S
Q705	2213183 or	2SA937-R or
	2213184	2SA937-Q
	Diodes	
D701	224450623	MTZ6.2C
D704	224450562	MTZ5.6B
D705-D707	223163	1SS133
	Capacitors	
C703	391244707	47 μ F,16V,Elect.
C704,C713	374721044	0.1 μ F±5%,50V,Plastic
C714	354764709	47 μ F,35V,Elect.
C716	354781099	0.1 μ F,50V,Elect.
	Resistor	
R737	49163472406	4.7kohm×6,1/10W,Network
	Ceramic oscillator	
X701	3010188	CST4.50MGW040
	Switches	
S701-S723	25035548	NPS-111-S510
	Sockets	
P101A	2006391255	NSAS-12P0159
P105A	2006392450	NSAS-24P0261
P106A	2006392050	NSAS-20P0259
P701A	2006391010	NSAS-10P0158
	Holder	
	27190778A	

POWER SUPPLY CIRCUIT PC BOARD (NAPS-4278-1)

CIRCUIT NO.	PART NO.	DESCRIPTION
C941	3500065A	⚠ DE7150F 103P AC400/125V,IS capacitor
S941	25035558	⚠ NPS-111-L520,Power switch
	27301216	⚠ Cover for C941

PC BOARD PARTS LIST

MODEL DX-708

MAIN CIRCUIT PC BOARD (NAAR-4272-2)

CIRCUIT NO.	PART NO.	DESCRIPTION
	ICs	
Q116	24120031	TOTX178
Q302	222755	74HCU04P
Q401,Q402	22240520	SM5861AP
Q403-Q408	222902	NJM5532D-D
Q417	222654	NJM4556D
Q501	22240288	SM5813AP
Q502	226027	HCPL-2601
Q953	222811	NJM4558D-D
Q954,Q955	222780053	78L05
Q956	222780055MIT	M5F78M05
	Transistors	
Q409,Q410	2213090 or 2213590	DTA114YS or RN2207
Q411,Q412	2212524 or 2212525	2SK363-GR or 2SK363-BL
Q413,Q414	2211705 or 2211706	2SD655-E or 2SD655-F
Q415,Q416	2213090 or 2213590	DTA114YS or RN2207
Q503	221281 or 2213570	DTC114YS or RN1207
Q504	2211254 or 2211255	2SC1815-Y or 2SC1815-GR
Q601,Q604	221281 or 2213570	DTC114YS or RN1207
Q602	2213090 or 2213590	DTA114YS or RN2207
Q603	2211945	2SK246-GR
Q951	2201284, 2201285 or 2201286	2SD882-R, 2SD882-Q or 2SD882-P
Q952	2201274, 2201275 or 2201276	2SB772-R, 2SB772-Q or 2SB772-P
	Diodes	
D601,D607	223163	1SS133
D608,D611	223163	1SS133
D612	224450822	MTZ8.2B
D613	223163	1SS133
D951-D954	22380045	RL-203
	Cores	
L102,R303	230906	BL02RN2-R62
R305,R306	230906	BL02RN2-R62
	Coil	
L301	231023	NCH-1062
	X'tal	
X302	3010189	DOC-80S
	Capacitors	
C191	354744709	47 μ F,16V,Elect.
C402,C403	393021017	100 μ F,6.3V,Elect.
C405-C408	374722234	0.022 μ F±5%,50V,Plastic
C409,C410	393021017	100 μ F,6.3V,Elect.
C415,C416	393121027	1000 μ F,6.3V,Elect.
C417,C418	374722234	0.022 μ F±5%,50V,Plastic
C423	374721044	0.1 μ F±5%,50V,Plastic
C425-C428	373302714	270pF±5%,125V,Plastic
C429,C430	373301014	100pF±5%,125V,Plastic
C431-C434	393144707	47 μ F,16V,Elect.
C437,C438	374722224	2200pF±5%,50V,Plastic
C439,C440	374722734	0.027 μ F±5%,50V,Plastic
C443,C444	374722224	2200pF±5%,50V,Plastic
C449,C450	374722224	2200pF±5%,50V,Plastic
C451,C452	372122024	2000pF±5%,50V,Styrole
C453,C454	373301014	100pF±5%,125V,Plastic
C455-C458	393144707	47 μ F,16V,Elect.
C459,C460	374721034	0.01 μ F±5%,50V,Plastic
C461,C462	393083317	330 μ F,50V,Elect.
C463-C468	374722234	0.022 μ F±5%,50V,Plastic
C469-C472	373301014	100pF±5%,125V,Plastic
C474	374722234	0.022 μ F±5%,50V,Plastic
C475,C476	393144707	47 μ F,16V,Elect.
C477-C480	373302714	270pF±5%,125V,Plastic
C481,C482	373301014	100pF±5%,125V,Plastic
C503	393022217	220 μ F,6.3V,Elect.
C508,C510	393021017	100 μ F,6.3V,Elect.
C603	393180107	1 μ F,50V,Elect.
C605	374724734	0.047 μ F±5%,50V,Plastic
C606	374724744	0.47 μ F±5%,50V,Plastic
C951,C952	374721044	0.1 μ F±5%,50V,Plastic
C953	374724744	0.47 μ F±5%,50V,Plastic
C954,C955	393154727	4700 μ F,25V,Elect.
C956,C957	374722244	0.22 μ F±5%,50V,Plastic
C958	393122217	220 μ F,6.3V,Elect.
C960-C962	393144707	47 μ F,16V,Elect.
C963-C966	374721044	0.1 μ F±5%,50V,Plastic
C967-C970	354784719	470 μ F,50V,Elect.
C971	393144707	47 μ F,16V,Elect.
C974	374721044	0.1 μ F±5%,50V,Plastic
C976	374721034	0.01 μ F±5%,50V,Plastic
	Resistors	
R951,R952	442520394	3.9ohm,1/2W,Metal oxide film
	Relay	
RL601	25065174	NRL-2P1A-DC12-09
	Terminals	
P111	25045172	HSJ1003-01-020
P401	25045351	NPJ-4PDWR197
	Plugs	
P102	25055148	NPLG-4P132
P107	25055154	NPLG-10P138
P402	25055150	NPLG-6P134
	Sockets	
JS401	25050267	NSCT-3P95
	2009990132	NSAS-2P0208
	Holder	
	27190751	

DIGITAL CIRCUIT PC BOARD (NADG-4273-2/2A)

CIRCUIT NO.	PART NO.	DESCRIPTION
	ICs	
Q102	22240404	CXA1571S
Q104	22240366	CXA1372S
Q105	22240487	CXD2500AQ
Q106	22240168	STA341M-L
Q107	222090	S2FR04
Q109	22240033	LA6500
Q110,Q111	22240034	LA6510
Q114	22240018	M51943ASL
Q901	222780055MIT	M5F78M05
Q902	222790055MIT	M5F79M05
	Transistors	
Q101,Q113	2211503 or	2SA950-O or
Q904	2211504	2SA950-Y
Q103	221281 or	DTC114YS or
	2213570	RN1207
Q112	2211163 or	2SC2120-O or
	2211164	2SC2120-Y
Q115	2211454 or	2SA1015-Y or
	2211455	2SA1015-GR
	Diodes	
D101,D903	223163	1SS133
D102,D103	224451102	MTZ11B
D901,D902	22380039	1D4B42
D904	224452702 or	MTZ27B or
	224652702	HZ27EB2
	Coil	
L101	231023	NCH-1062
	Core	
L102	230906	BL02RN2-R62
	Capacitors	
C101,C102	393121017	100 μ F,6.3V,Elect.
C103	374724724	4700pF±5%,50V,Plastic
C105,C107	393121017	100 μ F,6.3V,Elect.
C108,C110	374721044	0.1 μ F±5%,50V,Plastic
C111	374724734	0.047 μ F±5%,50V,Plastic
C112	374721034	0.01 μ F±5%,50V,Plastic
C113	374722224	2200pF±5%,50V,Plastic
C114-C116	374721044	0.1 μ F±5%,50V,Plastic
C118	354781009	10 μ F,50V,Elect.
C119,C123	374721044	0.1 μ F±5%,50V,Plastic
C121,C128	393121017	100 μ F,6.3V,Elect.
C124	354780229	2.2 μ F,50V,Elect.
C125	374721034	0.01 μ F±5%,50V,Plastic
C126	393180107	1 μ F,50V,Elect.
C127	354763309	33 μ F,35V,Elect.
C130,C132	374721034	0.01 μ F±5%,50V,Plastic
C131	374724724	4700pF±5%,50V,Plastic
C135	374722234	0.022 μ F±5%,50V,Plastic
C136,C137	374721034	0.01 μ F±5%,50V,Plastic
C138	393121017	100 μ F,6.3V,Elect.
C140	374721524	1500pF±5%,50V,Plastic
C141,C147	374721044	0.1 μ F±5%,50V,Plastic
C142	393022217	220 μ F,6.3V,Elect.
C146	374721034	0.01 μ F±5%,50V,Plastic
C148,C163	393144707	47 μ F,16V,Elect.
C149	374721024	1000pF±5%,50V,Plastic

CIRCUIT NO.	PART NO.	DESCRIPTION
	Capacitors	
C151-C153	393144707	47 μ F,16V,Elect.
C161	374722234	0.022 μ F±5%,50V,Plastic
C162	374724734	0.047 μ F±5%,50V,Plastic
C165,C166	393144707	47 μ F,16V,Elect.
C167,C168	393141017	100 μ F,16V,Elect.
C903,C904	374721044	0.1 μ F±5%,50V,Plastic
C905,C906	354752229	2200 μ F,25V,Elect.
C909,C910	391222217	220 μ F,6.3V,Elect.
C911,C912	374722234	0.022 μ F±5%,50V,Plastic
C917,C918	354752229	2200 μ F,25V,Elect.
C919	374721044	0.1 μ F±5%,50V,Plastic
C920,C921	354784709	47 μ F,50V,Elect.
	Resistors	
R111	5210060	N06HR2.2KBD,Semi-fixed
R115,R116	5210066	N06HR22KBD,Semi-fixed
R118	5210066	N06HR22KBD,Semi-fixed
R138	5210064	N06HR10KBD,Semi-fixed
R139	5210001	N06HR100BDM,Semi-fixed
	Plugs	
P101	25055150	NPLG-6P134
P103	25055139	NPLG-9P123
P104	25055149	NPLG-5P133
P105	25055156	NPLG-12P140
P106	25055154	NPLG-10P138
P108	25055151	NPLG-7P135
P109	25055150	NPLG-6P134
P110	25055038	NPLG-2P29
P111,P112	25055045	NPLG-4P33
	Sockets	
P102	2009990192	NSAS-8P0258
P107	2009990193	NSAS-20P0259
	IC protectors	
QF101,QF102	252112	⚠ ICPN15 <P/W>
	Switch	
S101	25065364	NSS-12138

HEADPHONE TERMINAL PC BOARD (NAAF-4274-2)

CIRCUIT NO.	PART NO.	DESCRIPTION
C483,C484	374721024	1000pF±5%,50V,Plastic capacitors
P403	25045221	HLJ0540-01-410,Terminal

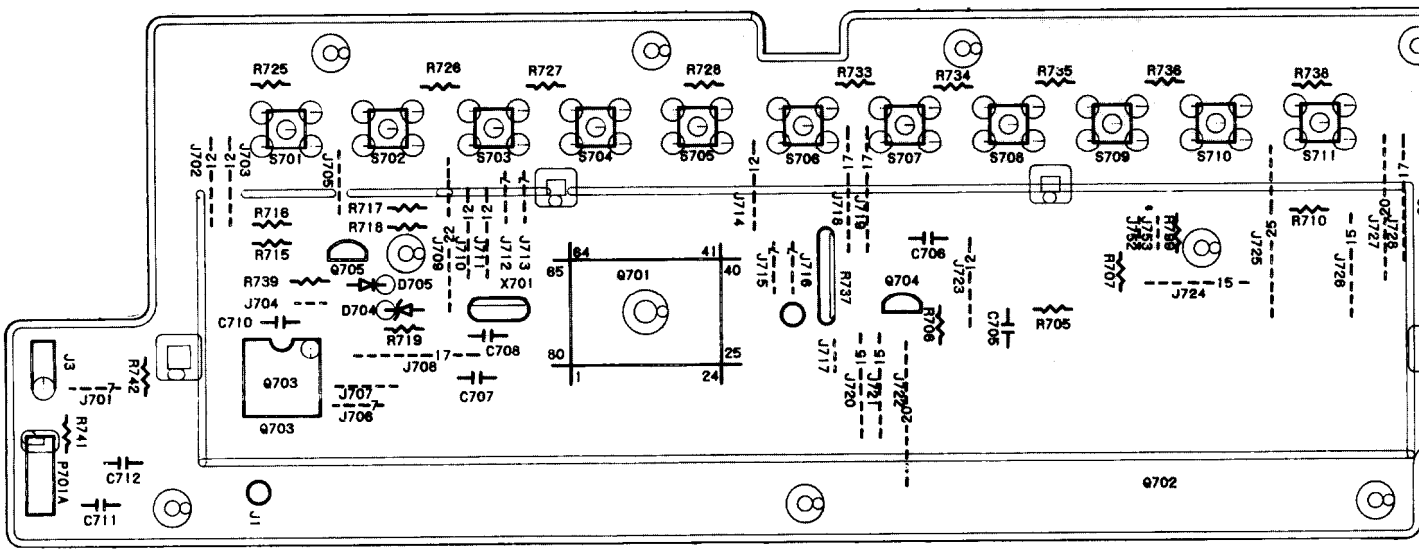
OUTPUT VOLUME PC BOARD (NAAF-4276-2)

CIRCUIT NO.	PART NO.	DESCRIPTION
P401A	2009990191	NSAS-12P0257,Socket
P701	25055149	NPLG-5P133,Plug
R491,R492	5104280	N16RGM20KB30F,Variable resistor
S721	25030331	NRSF-123-30SRRU,Rotary switch

SENSOR PC BOARD (NAETC-4277-2)

CIRCUIT NO.	PART NO.	DESCRIPTION
Q701	24130003	GP1U50XS,IC
C718	354744709	47 μ F,16V,Elect. capacitor

PC BOARD VIEW FROM BOTTOM SIDE



DISPLAY CIRCUIT PC BOARD (NADIS-4275-2/2A)

CIRCUIT NO.	PART NO.	DESCRIPTION
	FL tube	
Q702	212101	7-BT-151GK
	ICs	
Q701	22240521	CXP50116-166
Q703	222963 or	LB1630 or
	22240322	LB1639
	Transistors	
Q704	2212132 or	2SC2021-R or
	2212133	2SC2021-S
Q705	2213183 or	2SA937-R or
	2213184	2SA937-Q
	Diodes	
D701	224450623	MTZ6.2C
D704	224450562	MTZ5.6B
D705-D707	223163	1SS133
	Capacitors	
C703	391244707	47 μF,16V,Elect.
C704,C713	374721044	0.1 μF$\pm$5%,50V,Plastic
C714	354764709	47 μF,35V,Elect.
C716	354781099	0.1 μF,50V,Elect.
	Resistor	
R737	49163472406	4.7kohm$\times$6,1/10W,Network
	Ceramic oscillator	
X701	3010188	CST4.50MGW040
	Switches	
S701-S723	25035548	NPS-111-S510
	Sockets	
P101A	2006391255	NSAS-12P0159
P105A	2006392450	NSAS-24P0261
P106A	2006392050	NSAS-20P0259
P701A	2006391010	NSAS-10P0158
	Holder	
	27190778A	

POWER SUPPLY CIRCUIT PC BOARD (NAPS-4278-2)

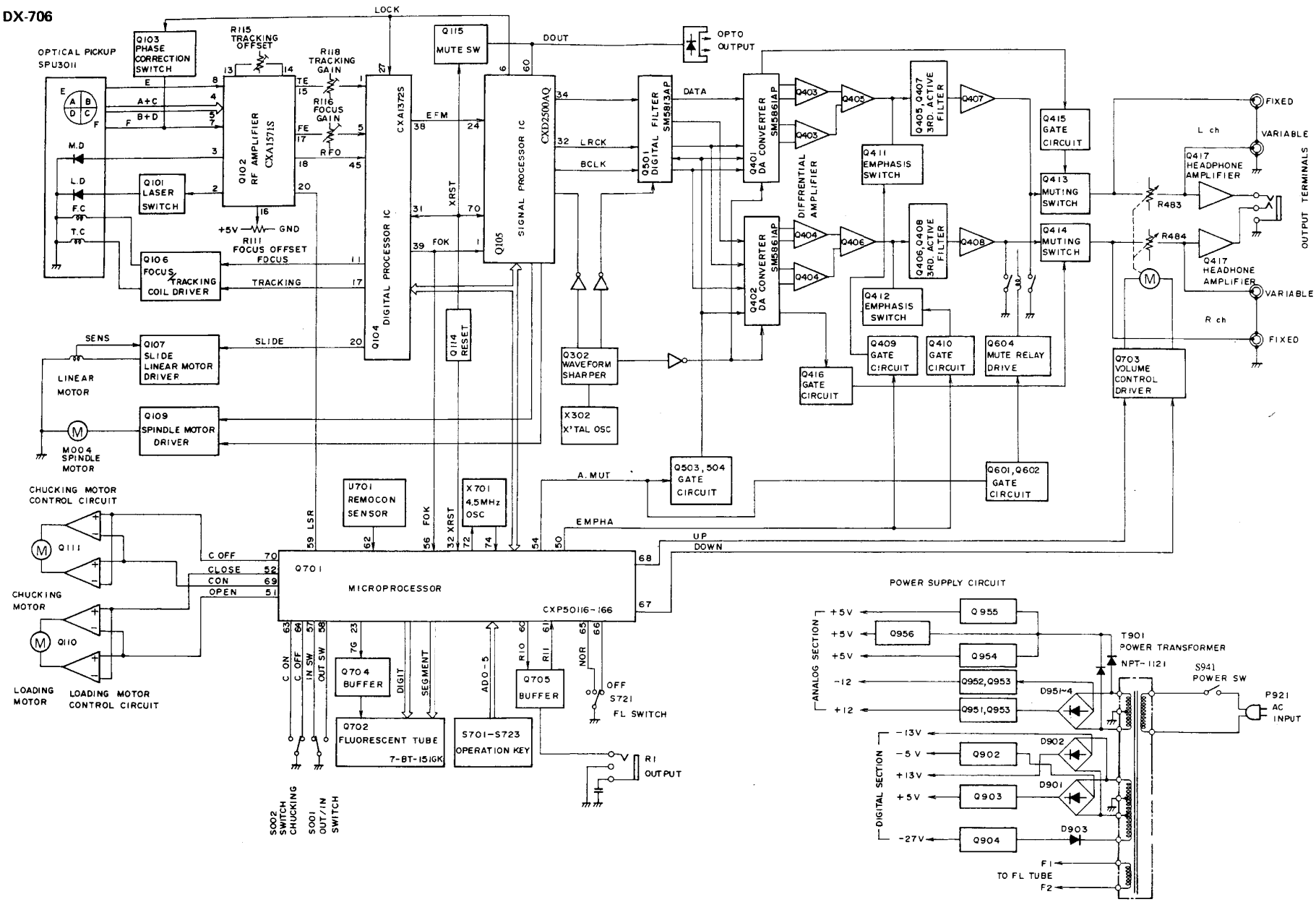
CIRCUIT NO.	PART NO.	DESCRIPTION
C941	3500065A	⚠ DE7150F 103P AC400/125V,IS capacitor
S941	25035558	⚠ NPS-111-L520,Power switch
	27301216	⚠ Cover for C941

NOTE: <P>:Only 230V model
<W>:Only Worldwide model

NOTE: THE COMPONENTS IDENTIFIED BY MARK ⚠ ARE CRITICAL FOR RISK OF FIRE AND ELECTRIC SHOCK. REPLACE ONLY WITH PART NUMBER SPECIFIED.

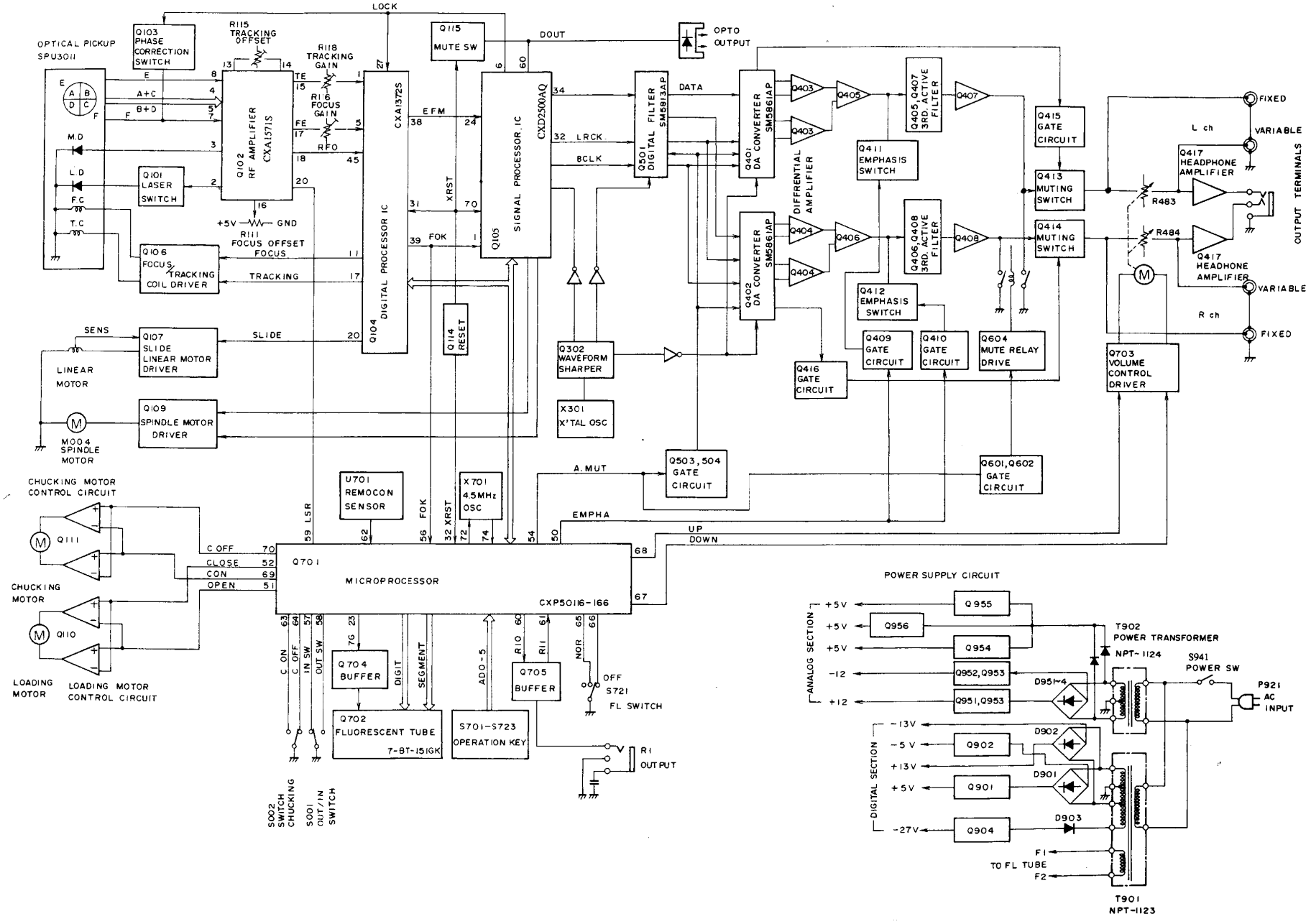
BLOCK DIAGRAM

MODEL DX-706

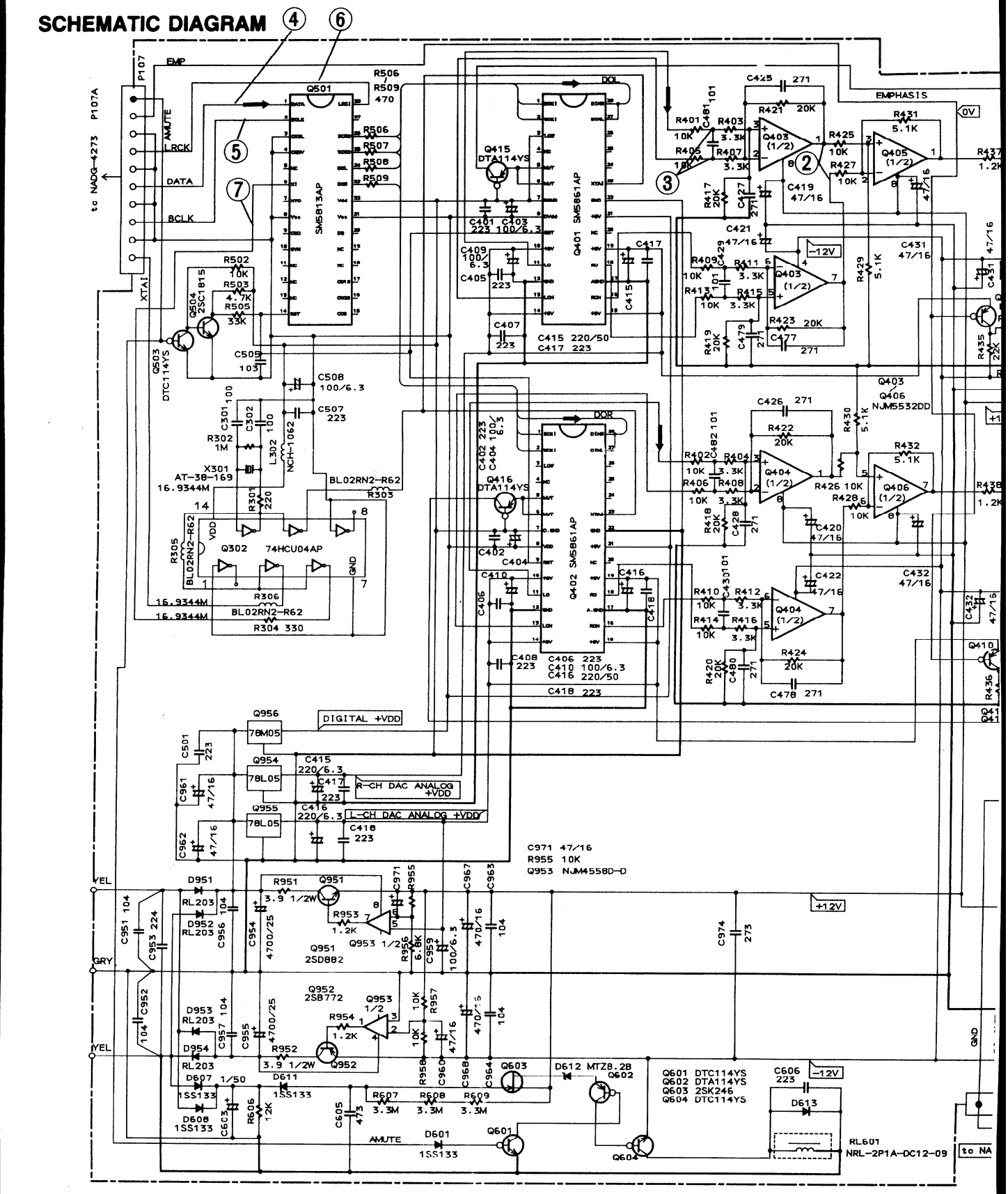


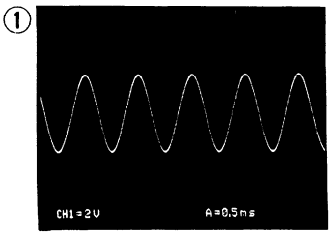
BLOCK DIAGRAM

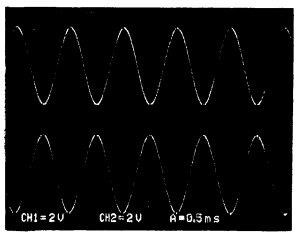
MODEL DX-708

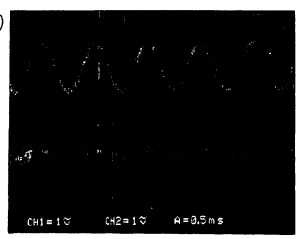


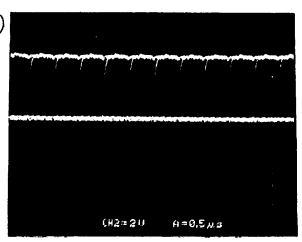
SCHEMATIC DIAGRAM

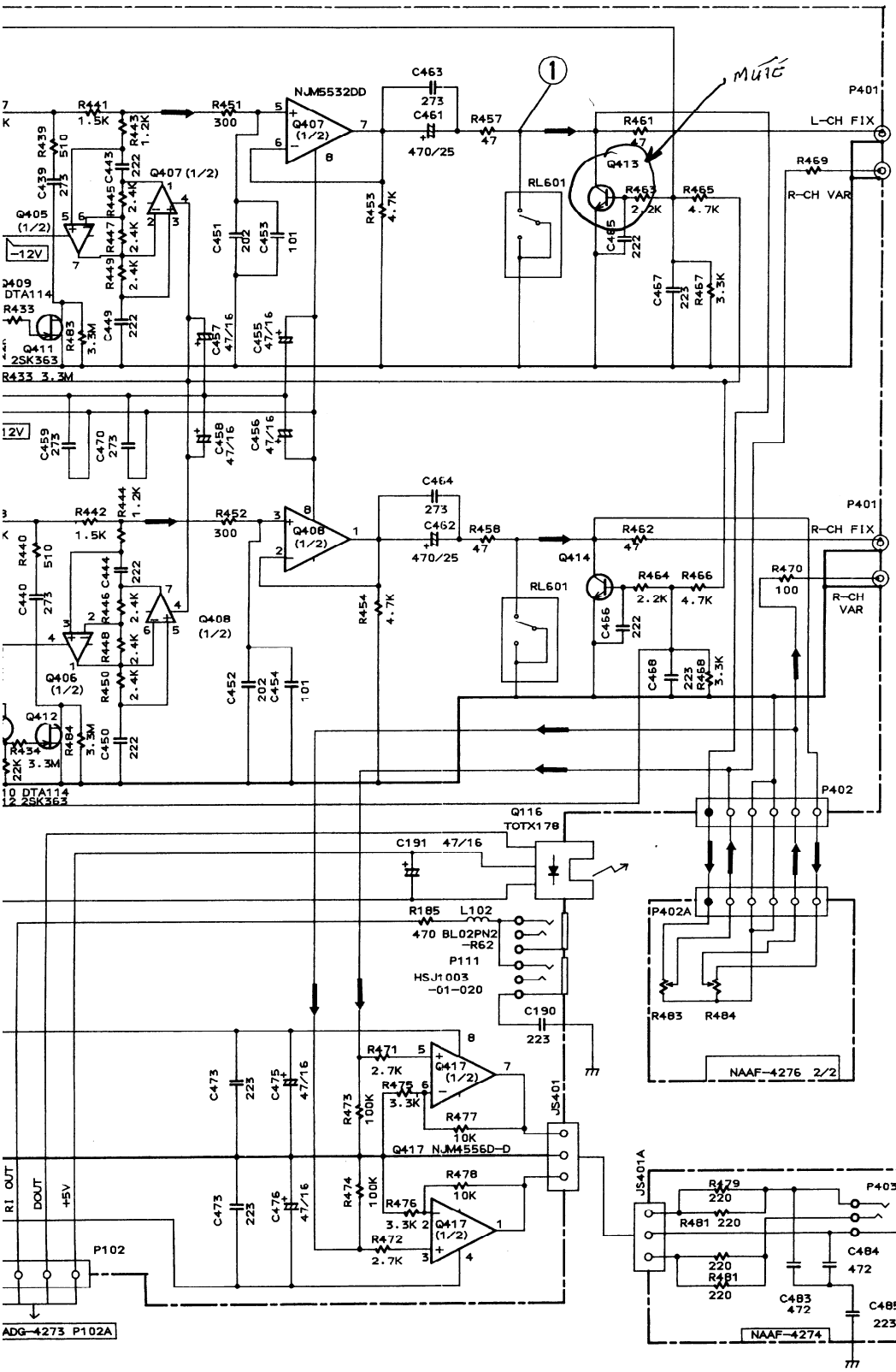


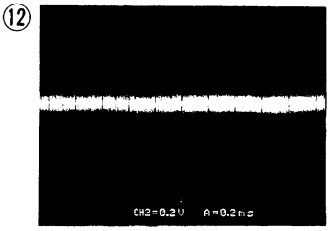




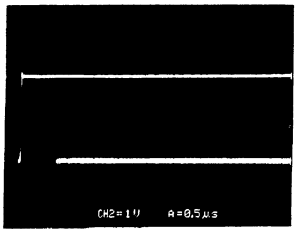




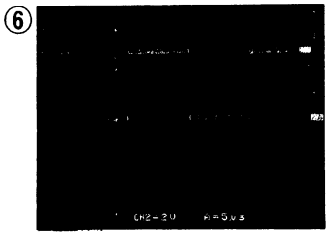

NJM5532DD
Q407 (1/2)
Q408 (1/2)
Q405 (1/2)
Q406 (1/2)
Q409 DTA114
Q410 DTA114
Q411 2SK363
Q412 2SK363
Q413
Q414
RL601
MUTE
L-CH FIX
R-CH FIX
R-CH VAR
P401
P402
P102
Q116 TOTX178
P111 HSJ1003 -01-020
Q417 NJM4556D-D
JS401
JS401A
P403
IP402A
NAAF-4276 2/2
NAAF-4274
ADG-4273 P102A
-12V
DOUT
+5V

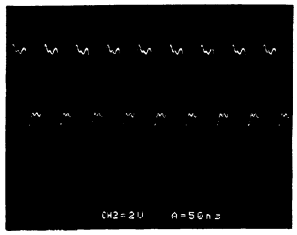

⑫
CH2=0.2V A=0.2ms

⑪
CH2=0.2V A=0.2ms


⑨
CH2=1V A=0.5μs

⑤

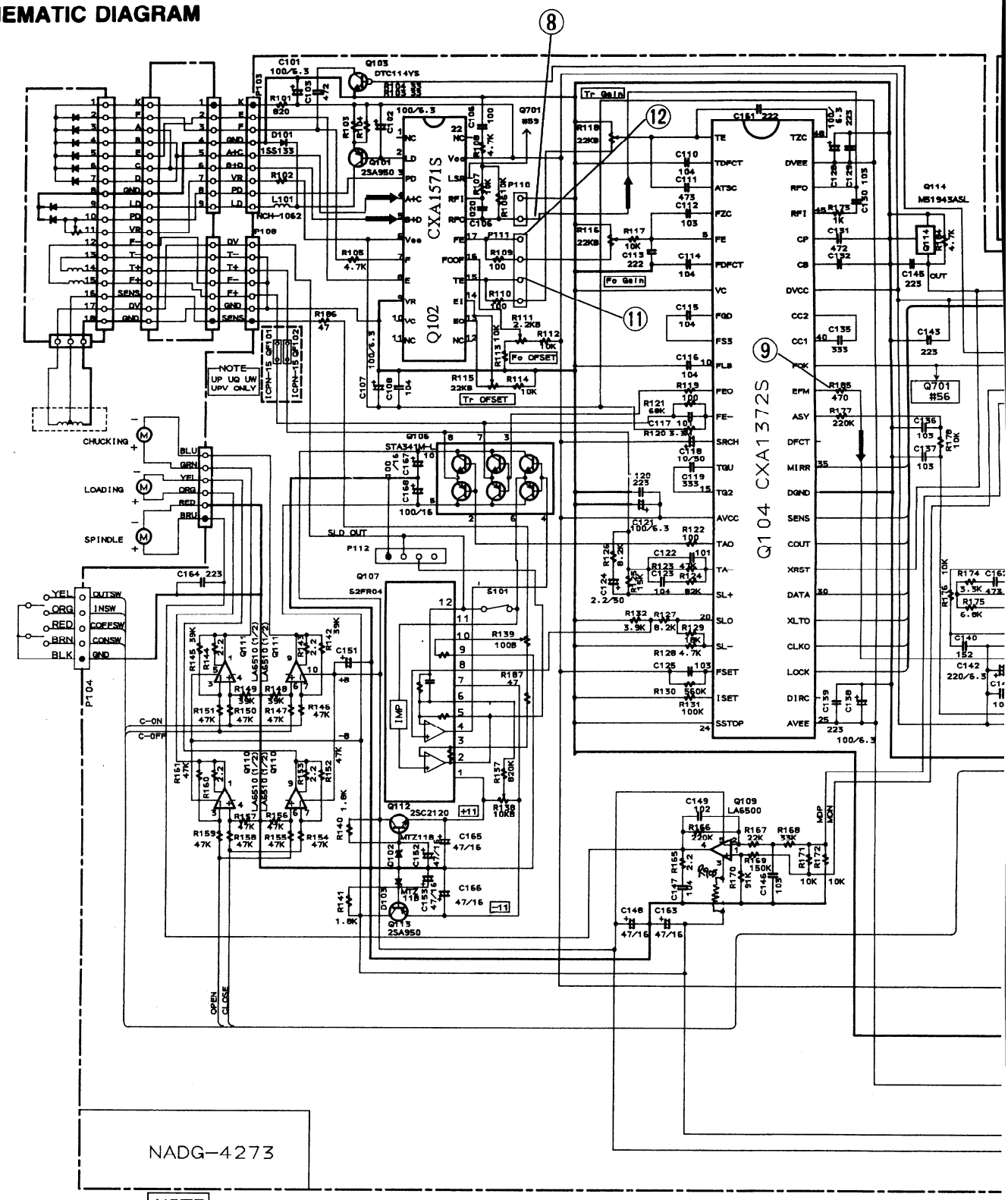

⑥


⑦

⑧
CH2=0.5V A=0.5ms

80/10/1

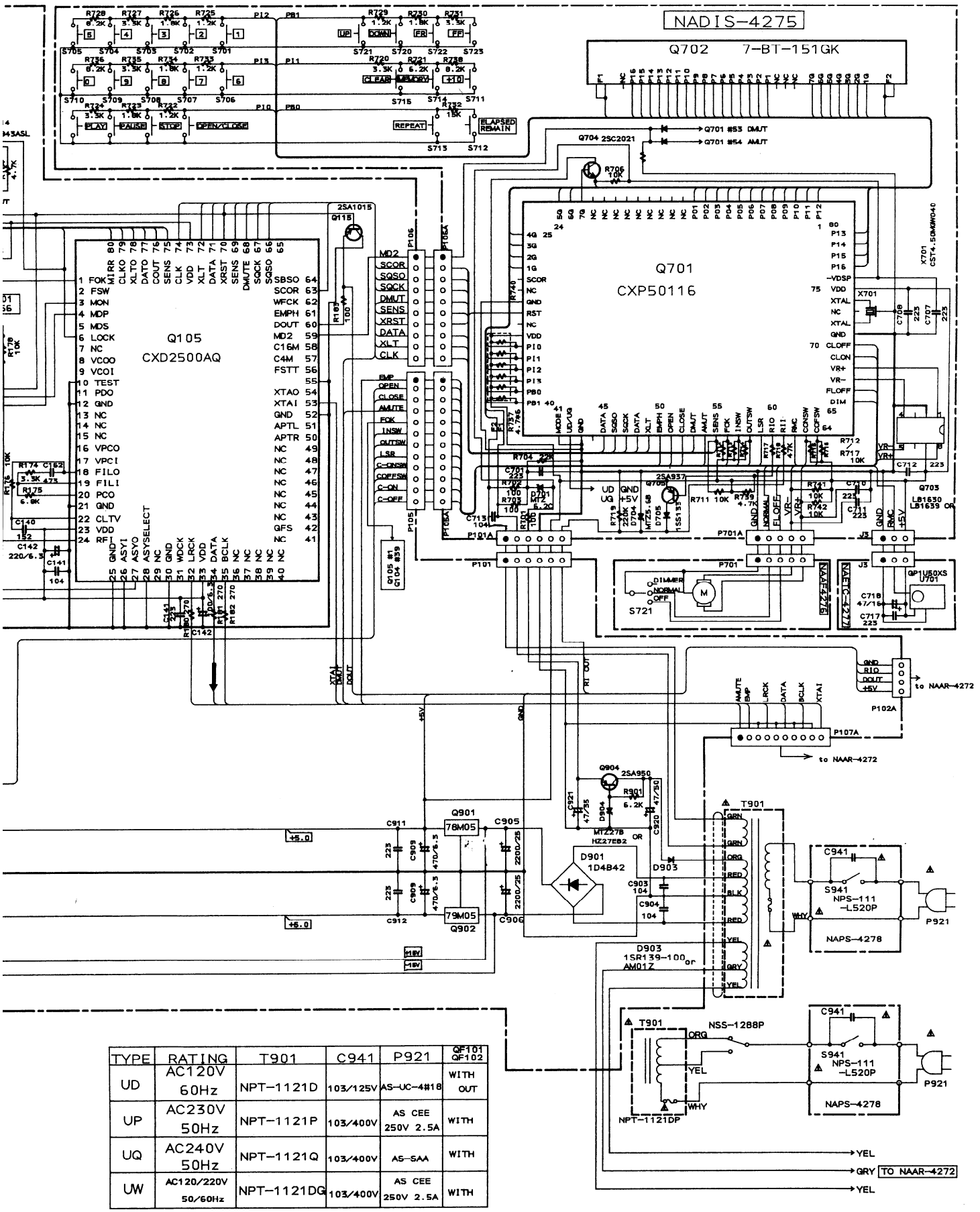
SCHEMATIC DIAGRAM



NOTE

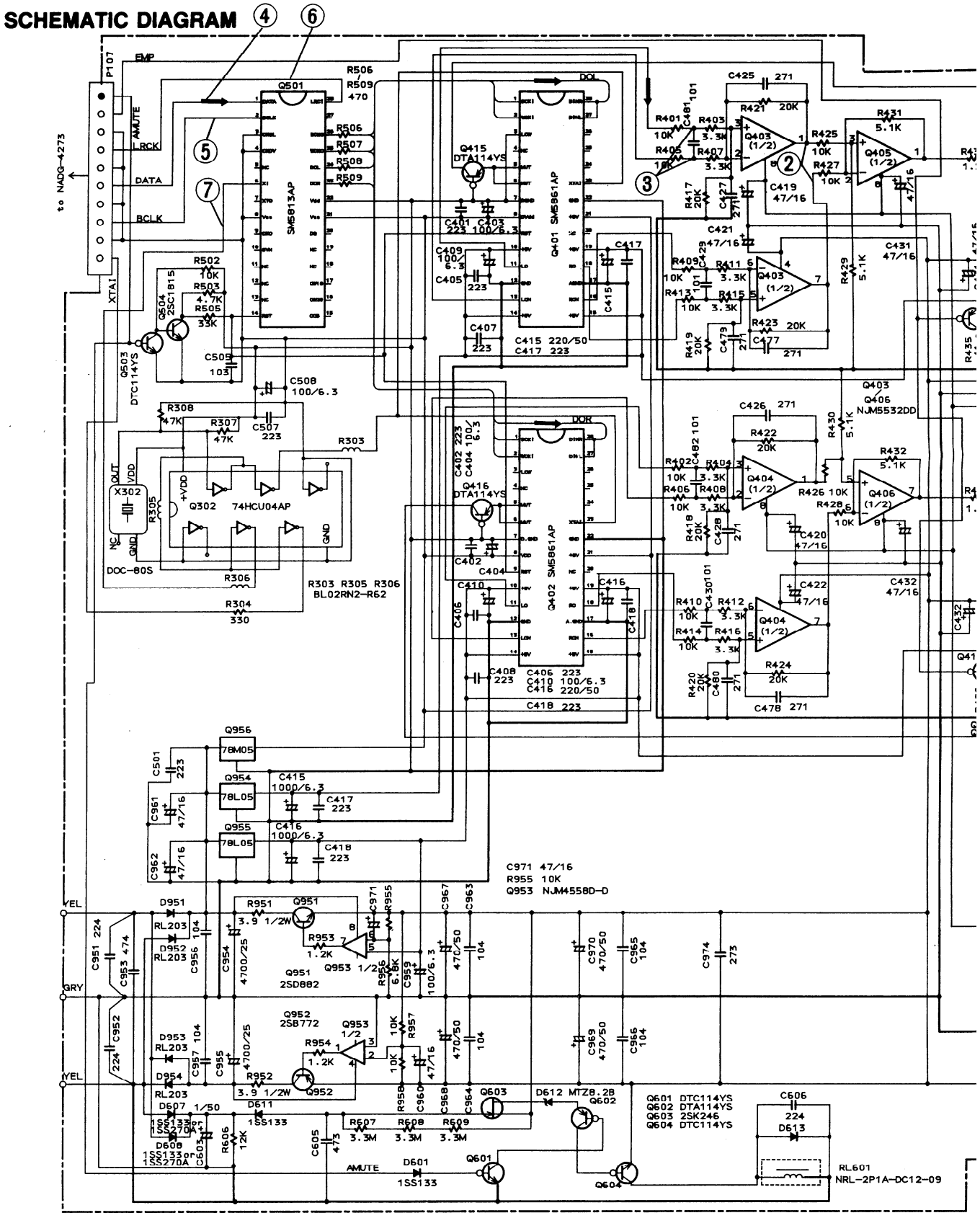
- THE COMPONENTS IDENTIFIED BY MARK ⚠ ARE CRITICAL FOR SAFETY. REPLACE ONLY WITH PART NUMBER SPECIFIED.
- VOLTAGE (MEASURED WITH VOLTMETER) ⊐ IS DC VOLTAGE. (NO INPUT SIGNAL)
- ALL PNP TRANSISTORS ARE EQUIVALENT TO 2SA1015-GR UNLESS OTHERWISE NOTED.
- ALL NPN TRANSISTORS ARE EQUIVALENT TO 2SC1815-GR UNLESS OTHERWISE NOTED.
- ALL DIODES ARE EQUIVALENT TO 1SS133 UNLESS OTHERWISE NOTED.
- ELECTROLYTIC CAPACITORS (-⊬) ARE IN μF/WV.
- ALL CAPACITORS ARE IN pF/50WV UNLESS OTHERWISE NOTED.
  EX) 3pF→030, 33pF→330, 330pF→331, 0.033μF→333
- ALL RESISTORS ARE IN OHMS 1/4 WATTS UNLESS OTHERWISE NOTED.
- THE THICK LINES IN PC BOARD ARE THE PRINTING SIDE OF THE PARTS.
  EX) ▭▭ ↙PRINTING SIDE
- CIRCUIT IS SUBJECT TO CHANGE FOR IMPROVEMENT.

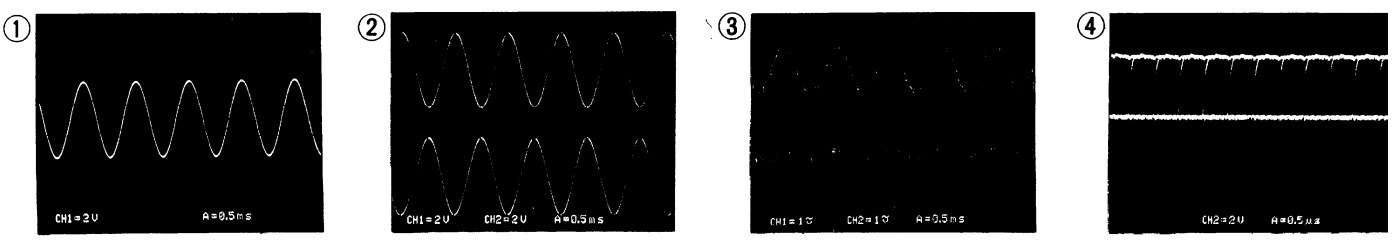
DL002

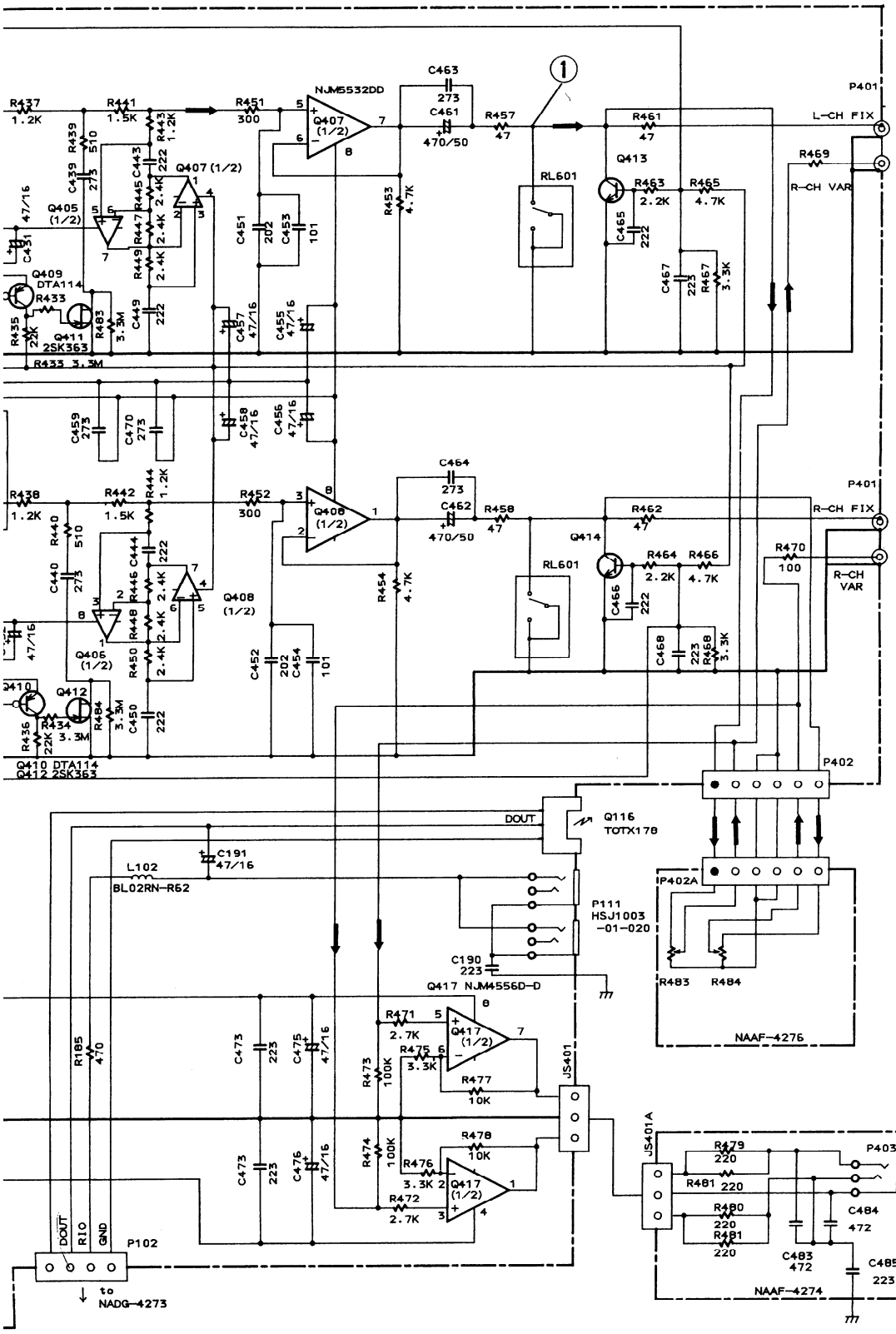


TYPE	RATING	T901	C941	P921	QF101 QF102
UD	AC120V 60Hz	NPT-1121D	103/125V	AS-UC-4#18	WITH OUT
UP	AC230V 50Hz	NPT-1121P	103/400V	AS CEE 250V 2.5A	WITH
UQ	AC240V 50Hz	NPT-1121Q	103/400V	AS-SAA	WITH
UW	AC120/220V 50/60Hz	NPT-1121DG	103/400V	AS CEE 250V 2.5A	WITH

SCHEMATIC DIAGRAM






NJM5532DD
Q407 (1/2)
Q405 (1/2)
Q409 DTA114
Q411 2SK363
Q408 (1/2)
Q406 (1/2)
Q410 DTA114
Q412 2SK363
RL601
Q413
Q414
P401
L-CH FIX
R-CH VAR
R-CH FIX
P402
Q116 TOTX178
DOUT
L102 BL02RN-R62
P111 HSJ1003 -01-020
P402A
R483
R484
NAAF-4276
Q417 NJM4556D-D
JS401
JS401A
P403
C484 472
C483 472
C485 223
NAAF-4274
P102
DOUT
RIO
GND
to NADG-4273

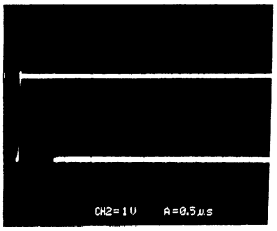
⑫

CH2=0.2V A=0.2ms

⑪

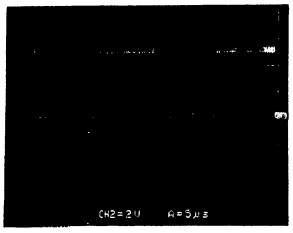
CH2=0.2V A=0.2ms

⑨

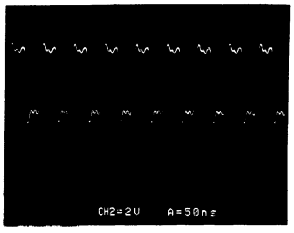

CH2=1V A=0.5μs

⑤

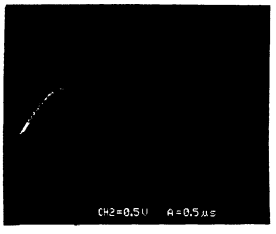
⑥


CH2=2V A=5μs

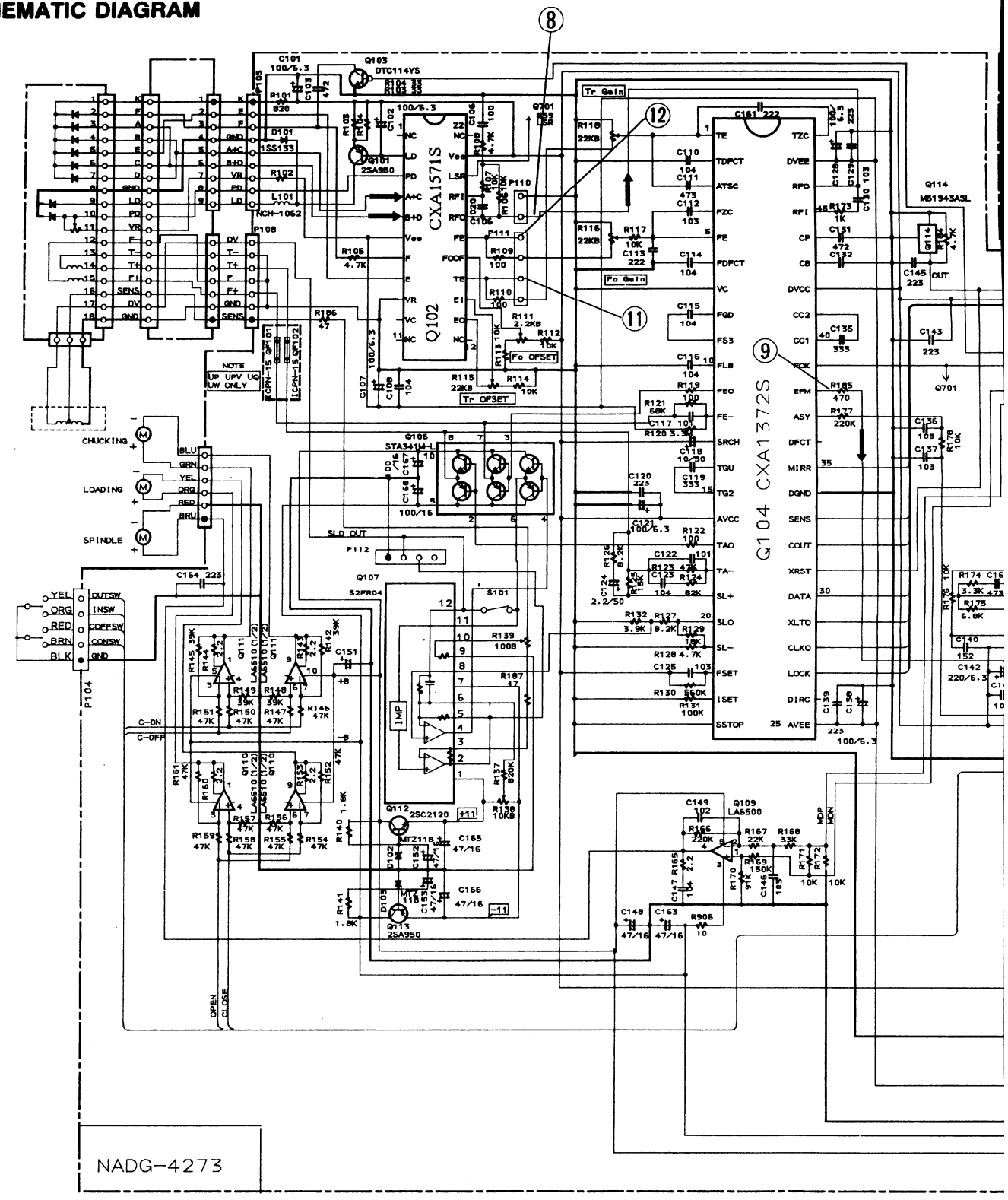
⑦


CH2=2V A=50ns

⑧


CH2=0.5V A=0.5μs

SCHEMATIC DIAGRAM



NOTE

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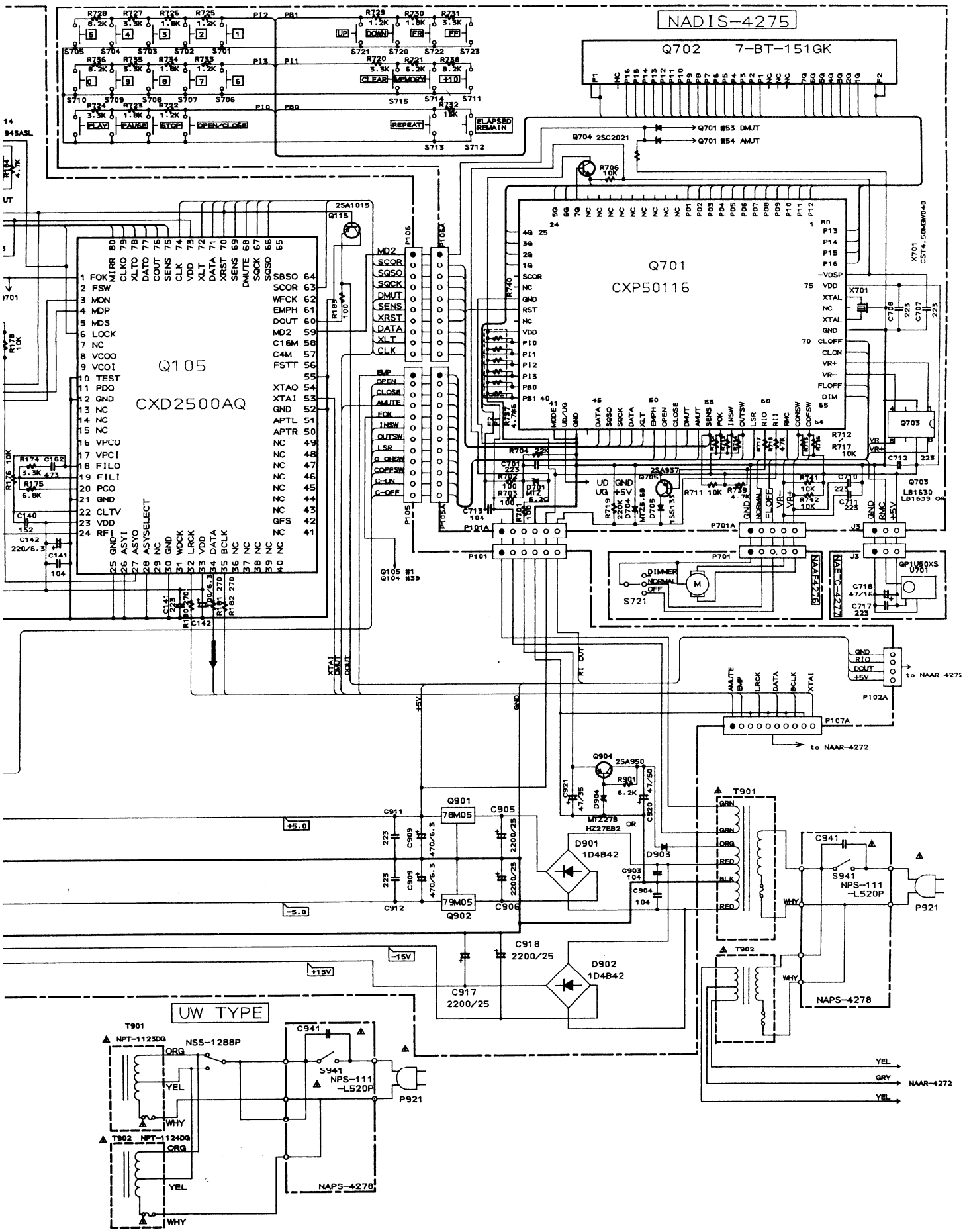
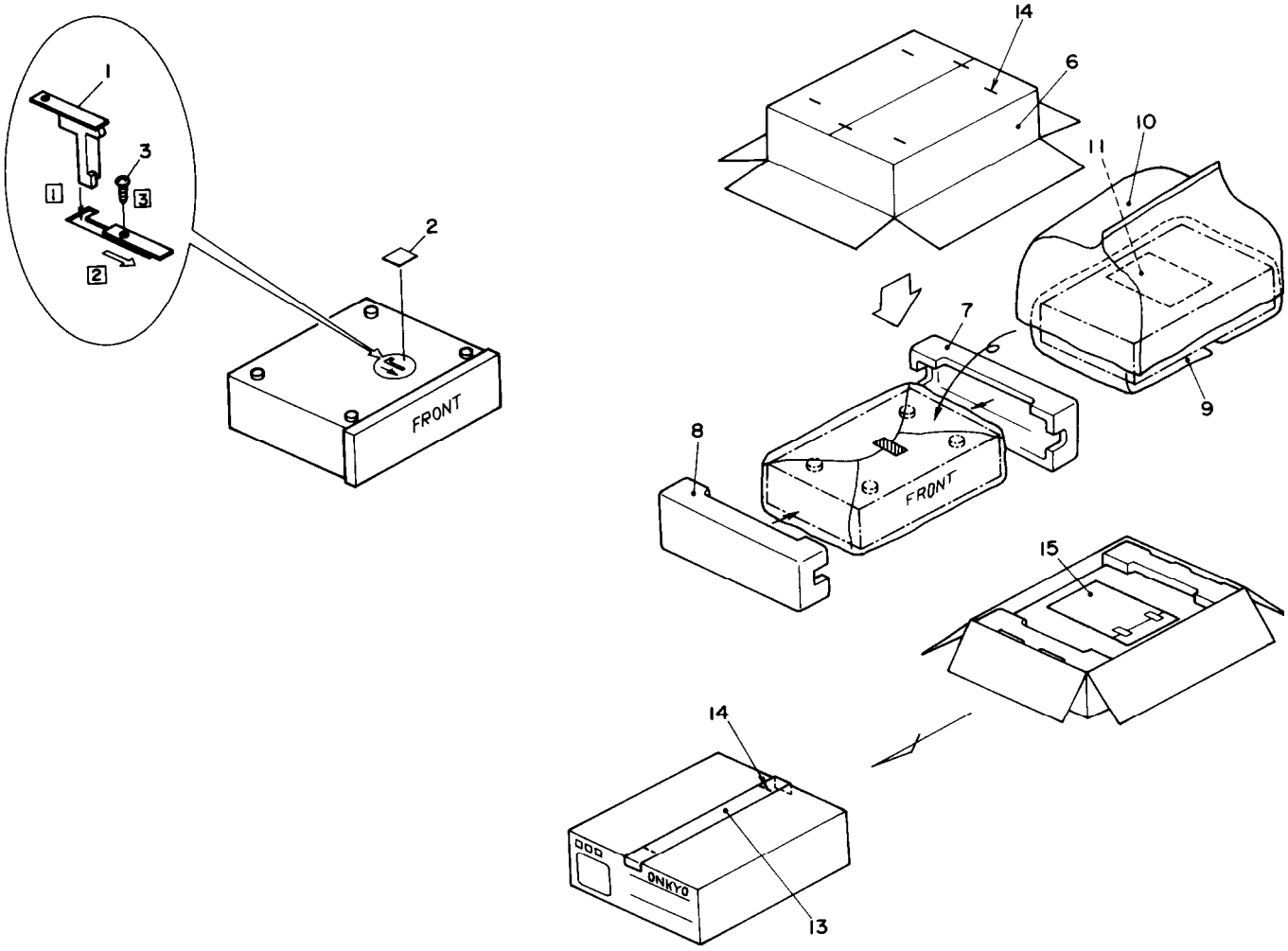
- ALL NPN TRANSISTORS ARE EQUIVALENT TO 2SC1815-GR UNLESS OTHERWISE NOTED.
- ALL DIODES ARE EQUIVALENT TO 1SS133 UNLESS OTHERWISE NOTED.
- ELECTROLYTIC CAPACITORS (-#-) ARE IN μF/WV.
- ALL CAPACITORS ARE IN pF/50WV UNLESS OTHERWISE NOTED. EX)3pF→030, 33pF→330, 330pF→331, 0.033μF→333
- ALL RESISTORS ARE IN OHMS 1/4 WATTS UNLESS OTHERWISE NOTED.
- THE THICK LINES IN PC BOARD ARE THE PRINTING SIDE OF THE PARTS. EX) ~~PRINTING~~ SIDE
- CIRCUIT IS SUBJECT TO CHANGE FOR IMPROVEMENT.

TYPE	RATING	T901	C941	P921	QP102	T902
UD	AC120V 60Hz	NPT-1123D	103/ 125V	AS-UC-4 #18	WITH OUT	NPT-1124D
UP	AC230V 50Hz	NPT-1123P	103/ 400V	AS CEE 250V2.5A	WITH	NPT-1124P
UQ	AC240V 50Hz	NPT-1123Q	103/ 400V		WITH	NPT-1124Q
UW	AC120/220V 50/60Hz	NPT-1123DQ	103/ 400V	AS CEE 250V2.5A	WITH	NPT-1124DQ


NADIS-4275
Q702 7-BT-151GK
Q701
CXP50116
Q105
CXD2500AQ
UW TYPE
NAPS-4278
NAAR-4272
to NAAR-4272
ONKYO CORPOR

PACKING VIEW



MODEL DX-706

REF.NO.	PART NO.	DESCRIPTION
1	29335034A	Lock lever
2	29361360	Label
3	834430088	3TTS+8B(BC),Self-tapping screw
6	29052293	Master carton box <B>
	29052305	Master carton box <S>
7	29091518A	Pad L
8	29091519A	Pad R
9	29095012-1	Protection sheet
10	29100105	620×550mm,Styrene bag
11	29355180	Caution sheet
13	29110071	Damplon tape
14	282301	Sealing hook
15	Accessary bag ass'y	
	2010098A	Connection cord
	2010200	Cord RI
	24140217A	RC-217C,Remote control transmitter
	3010054	UM-3,Two batteries
	29100097	350×250mm,Styrene bag
	29341661	Instruction manual <D>
	29341663	Instruction manual <P/W>
	29365019A	Warranty card <N>
	29365024A	Warranty card <F>
	29100107	Styrene bag for warranty card <F>
	29358002J	Service station list <N>
	25055040	CV-K-2,Conversion plug <W>

MODEL DX-708

REF.NO.	PART NO.	DESCRIPTION
1	29335034A	Lock lever
2	29361360	Label
3	834430088	3TTS+8B(BC),Self-tapping screw
6	29052299	Master carton box
7	29091518A	Pad L
8	29091519A	Pad R
9	29095012-1	Protection sheet
10	29100105	620×550mm,Styrene bag
11	29355180	Caution sheet
13	29110071	Damplon tape
14	282301	Sealing hook
15	Accessary bag ass'y	
	2010238	Connection cord
	2010200	Cord RI
	24140218A	RC-218C,Remote control transmitter
	3010054	UM-3,Two batteries
	29100097	350×250mm,Styrene bag
	29341661	Instruction manual <D>
	29341663	Instruction manual <P/W>
	29365019A	Warranty card <N>
	29365024A	Warranty card <F>
	29100107	Styrene bag for warranty card <F>
	29358002J	Service station list <N>
	25055040	CV-K-2,Conversion plug <W>

1 . Insert the lock lever into the hole on the bottom board as shown left.
2 . Move the lock lever to the arrow mark.
3 . Tighten the screw to secure the lock lever with

NOTE:<D> : Only 120V models
<P> : Only 230V/240V models
<W> : Only Wolrdwide model
<N> : Only U.S.A. model
<F> : Only French model
<S> : Only Silver model
<B> : Only black model

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200 Williams Drive, Ramsey, N.J. 07446 Tel. 201-825-7950
ONKYO DEUTSCHLAND GMBH, ELECTRONICS
8034 München-Germering, Industriestrasse 18 West Germany. Fax: 49-89-849-3226 Telefon: (089)-84-3071
ONKYO Europe GmbH
Hellersbergstrasse 4, 4040 Neuss WEST GERMANY
Tel: 02101 12 00 75 Fax 02101 10 33 06